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FLEET OWNER

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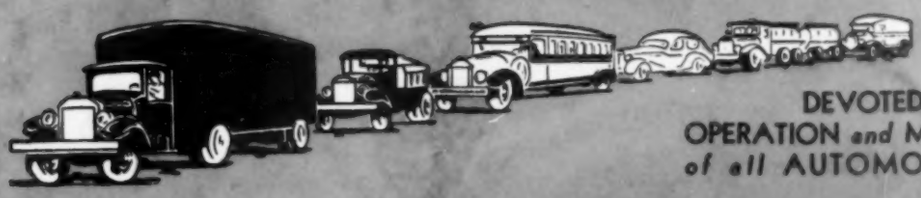
VOLUME 19 •
NUMBER 6 • •
DECEMBER, 1937



DEVOTED *to the* BETTER OPERATION *and* MAINTENANCE *of all* AUTOMOTIVE FLEETS

ECONOMY RECORDS SWING SPOTLIGHT TO

REO

Straight across America, operators who have carefully kept haulage records for every type of business, conclusively give first place in economy to rugged, truck-built Reos!

On the basis of these outstanding records, it is no wonder that an overwhelming percentage of Reo owners always choose Reo when replacing or adding truck equipment.

Matchless Mileage Marks

Upholding their title "America's Toughest Trucks", thousands of Reos have served above a quarter-million miles—with incredibly low maintenance costs!

Records like these are possible for Reo, because it is truck-built through-out, by specialists in commercial transportation.

And now Reo's newest development—*matched-unit engineering*—shows the way to even greater truck earnings. It eliminates the last element of chance in the purchase of a truck. Whatever your haulage requirements may be, Reo factory-trained men in your own community see that you get the right combination of chassis, body and equipment to meet your exact needs.

Reo-Built Quality

That means a truck engineered as a unit, with all the famous features pioneered by Reo and proved by the yardstick of "profit mileage"—including Reo's Gold Crown or Silver Crown Engine, full floating rear axle, internal expanding hydraulic brakes and full pressure lubrication. Visit your nearest Reo dealer—let him show you how Reo's new *matched-unit engineering* assures maximum haulage economy.

REO SPEEDWAGONS AND TRUCKS

Built and sold to Precision Standards. Ask your Reo dealer to show you how the Reo Performance Gauge will insure the selection of exactly the right truck for your needs. Maximum economy is sure to result.

New fleet of ¾-Ton Reos operated by Foerst Delivery of St. Louis.

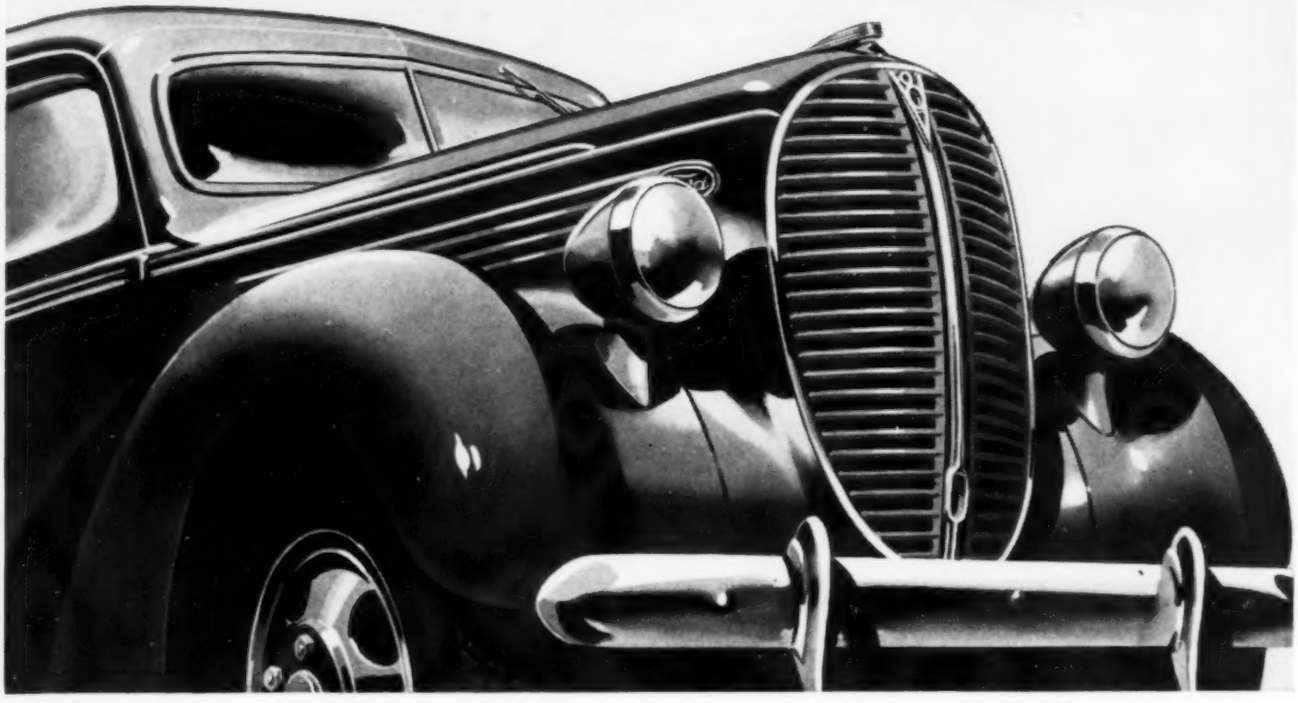
REO MOTOR CAR COMPANY, LANSING, MICHIGAN

21,000 Copies of This Issue

ANNOUNCING THE 1938 LINE OF

FORD V-8 TRUCKS

INCLUDING A NEW *One-Tonner*



FORD OFFERS WIDE RANGE. FAMOUS V-8 ENGINE BRINGS NEW ECONOMY TO LOADS IN ONE-TON RANGE

THE Ford Motor Company has built more than four million trucks. With this great background of experience, it means something to say that the 1938 Ford V-8 Trucks are the finest Ford has ever built.

Here is the widest range of types and sizes in all Ford history. The big 134-inch and 157-inch wheelbase Ford V-8 Trucks are designed to do the work of heavier, more expensive units—and do it faster, at lower cost. An entirely new line of 122-inch wheelbase one-ton trucks has been added to bridge the gap between the larger trucks and the new 112-inch wheelbase commercial cars. For practically every hauling and delivery requirement there is now a unit that gives the high Ford standard of dependability and economy!

The 1938 line of trucks and commercial cars are all newly styled. They have an impressive new front end, a sturdy new grille, new headlamps, massive full-skirted fenders. Their smart, modern appearance is a definite asset to any business.

Other important advances for 1938 are a new 134-inch wheelbase in the big truck line . . . a new frame width for both the 134-inch and 157-inch wheelbase units . . . 7.50—20 dual tire and wheel equipment available at extra cost . . . improved brakes and easier steering . . . stronger construction in vital parts.

The new one-tonners and the commercial cars offer a choice of the 85 or 60 horsepower V-8 engine.

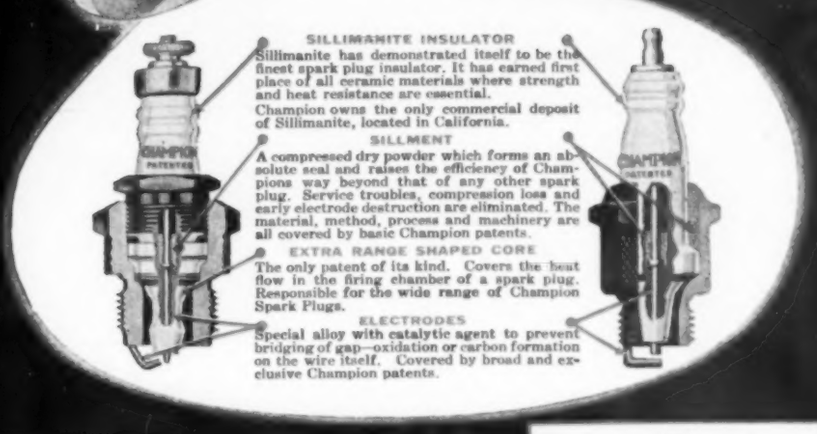
Your Ford dealer invites you to see the new line—and to make an "on-the-job" test with your loads and your driver.

LOW FIRST COST IS ONLY THE START OF FORD ECONOMY

FORD'S SEVENTH YEAR OF V-8 SUCCESS

CHAMPION

SPOTLIGHTS THE BETTER SPARK PLUG


SILLIMANITE INSULATOR
Sillimanite has demonstrated itself to be the finest spark plug insulator. It has earned first place of all ceramic materials where strength and heat resistance are essential.
Champion owns the only commercial deposit of Sillimanite, located in California.
SILLMENT
A compressed dry powder which forms an absolute seal and raises the efficiency of Champions way beyond that of any other spark plug. Service troubles, compression loss and early electrode destruction are eliminated. The material, method, process and machinery are all covered by basic Champion patents.
EXTRA RANGE SHAPED CORE
The only patent of its kind. Covers the heat flow in the firing chamber of a spark plug. Responsible for the wide range of Champion Spark Plugs.
ELECTRODES
Special alloy with catalytic agent to prevent bridging of gap—oxidation or carbon formation on the wire itself. Covered by broad and exclusive Champion patents.

Patented Features and Performance Records Definitely Proclaim Champion the Better Spark Plug

The exclusive and patented features spotlighted and briefed above are but a few on which Champion claims recognition as the better spark plug—for every engine.

But—the proof of the pudding is in the eating and we know of no harder spark plug testing laboratory than racing. Here spark plugs are subjected to treatment twice as tough as that experienced in every day driving. Yet in this field Champions have emerged unscathed and universally triumphant for fourteen consecutive years.

Moreover Champions have been and continue to be the choice of the majority of the world's motorists, which is proof positive that Champion's patented features make every engine a better performing engine. Use Champions because you can *depend* on them.

The only complete spark plug service unit. Tests, cleans all makes and sizes of spark plugs. Pays for itself in a short time. Attractively priced. Ask your jobber.

CHECK AND CLEAN SPARK PLUGS WHEN YOU CHANGE OIL

"Did you know that Cle-Air Shock Eliminators* give the same soft ride whether the truck is loaded or empty?"

* A new but proven rear-end unit operating on the famous air + fluid principle of Gruss Air Springs and Aerol Landing Struts. Functions as shock absorber, rebound snubber and helper spring. Users report remarkable results in increased roadability, cargo protection and maintenance economy. Manufactured by the Automotive-Aircraft Division of The Cleveland Pneumatic Tool Co., Cleveland, Ohio.

A MILLION MILES ON *"The Southwest's Fastest Fleet"*

Here are the benefits that the Hedrick Express Lines realized from Texaco Marfak: *"Longer periods between lubrication—No bearing failures in a year—Great saving in labor—Avoidance of delays—Elimination of road failures—Reduced grease consumption."*

To keep piston rings efficient, free from sticky, gummy deposits, that burn into hard carbon, fill the crankcase with NEW TEXACO MOTOR OIL. Refined by the Furfural Process, New Texaco Motor Oil is all lubricant . . . crankcases stay full longer.

RUNNING FROM ALBUQUERQUE, NEW MEXICO, through El Paso and Gallup, to Denver, the trucks of the Hedrick Express Lines must withstand constant, gruelling service in severe weather.

Hedrick uses Texaco Marfak for wheel bearing and chassis lubrication.

From actual operating data on trucks running more than 50,000 miles per year, this operator has recorded an annual saving of $48.30 per truck . . . or $2,415 for the entire fleet. Mileage between lubrication jobs has been increased more than *three times*, bringing still further savings in labor and lubricant costs. The annual costs of parts replacements, labor inspections, and time lost, greatly reduced. Putting your fleet on Marfak is a first step toward better performance and greater operating economy.

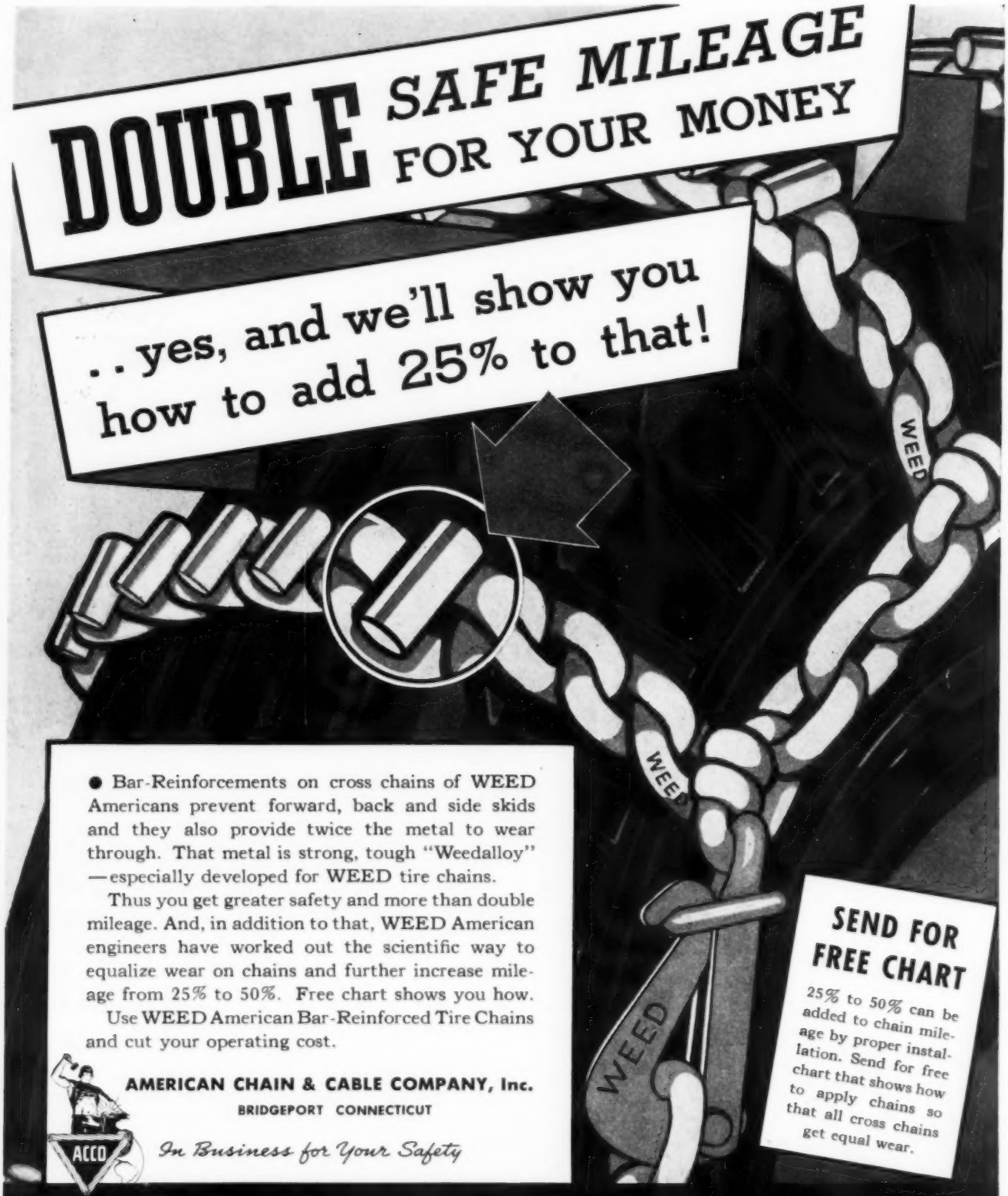
The Texas Company,
135 East 42nd Street,
New York City.

TEXACO

TEXACO
MARFAK

DOUBLE SAFE MILEAGE FOR YOUR MONEY

..yes, and we'll show you how to add 25% to that!



● Bar-Reinforcements on cross chains of WEED Americans prevent forward, back and side skids and they also provide twice the metal to wear through. That metal is strong, tough "Weedalloy" —especially developed for WEED tire chains.

Thus you get greater safety and more than double mileage. And, in addition to that, WEED American engineers have worked out the scientific way to equalize wear on chains and further increase mileage from 25% to 50%. Free chart shows you how.

Use WEED American Bar-Reinforced Tire Chains and cut your operating cost.

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT CONNECTICUT

In Business for Your Safety

SEND FOR FREE CHART

25% to 50% can be added to chain mileage by proper installation. Send for free chart that shows how to apply chains so that all cross chains get equal wear.

WEED WEED American *Bar-Reinforced* TIRE CHAINS

Licensed to manufacture and sell Bar-Reinforced Tire Chains under United States and Canadian Letters Patent: American Chain & Cable Company, Inc.; The McKay Company; The Hodell Chain Company; Pyrene Manufacturing Company; Dominion Chain Company, Limited; and Pyrene Manufacturing Company of Canada, Limited.

MILEAGE RECORDS

OF 1500 OPERATORS SHOW ECONOMIES OF SOVAC OILS

YOUR AVERAGE *run*... how does it figure in oil-per-mile? Is that good, or better than other operators are getting on the same kind of equipment and service as yours?

Socony-Vacuum's "fleet engineers" can answer such questions for you.

Our file of performance records on what Sovac Oils have saved others in your line of business can help you cut lubrication overhead on your fleet, because it provides an efficiency standard for comparison with present costs.

There's nothing mysterious about the better performance you always get with Sovac Oils. The answer is in the fact that they're just cleaner lubricants, with the gum and sludge-forming impurities taken out. Modern refining methods keep them uniform.

Result: you get smoother engines, fewer repairs and lower cost-per-mile on your oil. Ask our "fleet engineer" for full details today.

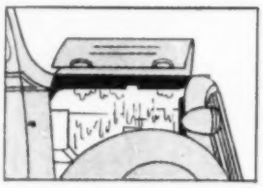
SOCONY-VACUUM OIL CO., INC.

STANDARD OIL OF NEW YORK DIVISION · WHITE STAR DIVISION · LUBRITE DIVISION · WHITE EAGLE DIVISION
WADHAMS OIL COMPANY · MAGNOLIA PETROLEUM COMPANY · GENERAL PETROLEUM CORPORATION OF CALIFORNIA

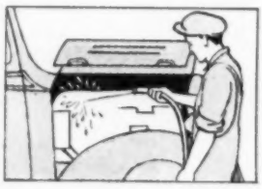
SOCONY-VACUUM

DO YOU KNOW THIS *NEW* WAY FOR CLEANING DIRTY, GREASY MOTORS?

SPRAY . . .



Let SOAK . . .



RINSE . . .

that's all!

YES . . . that's all there is to it when you clean motors this NEW way . . . with OAKITE COMPOSITION NO. 9. For the amazingly rapid penetrating and grease dissolving action of this NEW material literally soaks off the grease, oil and dirt. After muck and grease deposits are loosened, a final rinse leaves surfaces spotlessly clean. Work is left dry . . . with no trace of oily films.

This method, employing a COLD solution is highly efficient and a remarkable time-saver when cleaning motors, repair parts, automotive equipment, floors, etc. Has many other uses.

Drop us a line . . . and we'll send you an interesting, newly prepared booklet giving additional facts on the time-saving and money-saving features of OAKITE COMPOSITION NO. 9. No obligation.

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OAKITE PRODUCTS, INC., 52G Thames St., New York, N. Y.

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OAKITE

TRADE MARK REG. U.S. PAT. OFF.

SPECIALIZED INDUSTRIAL CLEANING MATERIALS & METHODS

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FLEET OWNER

Published Monthly in the interests of Automotive Fleet Owners, who Operate or Direct their own Service, and devoted to the Better Operation and Maintenance of Truck, Trailer, Bus, Passenger Car, Taxicab and all Automotive Fleets.

VOL. 19 New York, December, 1937 No. 6

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SMMS

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GMC *Announces* FOR 1938

- IMPROVED DUAL-TONE APPEARANCE
- GREATER DRIVER COMFORT AND CONVENIENCE
- BIGGEST STANDARD BODIES IN THE INDUSTRY
- MECHANICAL BETTERMENTS
- GMC PRICES STILL CROWDING THE LOWEST
- LOWEST PRICES FOR STANDARD CAB-OVER-ENGINE MODELS

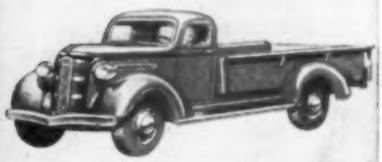
GMC offers for 1938 three new fast-duty models, a new ¾-ton, a new 1-ton—and a stalwartly built 1¼-ton model. GMC introduces a long list of mechanical betterments, notably improving its extensive line. GMC unveils a new stream-style dress, a still finer evolution of its already famous "Dual-Tone" design. And GMC offers all models ½ to 12 tons *at prices that are still crowding the lowest!* See these trucks—see your GMC dealer.

THE TRUCK OF VALUE GMC

Three NEW MODELS *and a* FULL LINE ½ TO 12 TONS

Built to shoulder loads not practical for lighter trucks, GMC's new ¾-ton, new 1-ton, and new 1¼-ton models are stoutly framed, amply powered, and equipped with the biggest standard bodies (panel, pick-up and stake) that trucks in this class afford! GMC now offers longer-life trucks in the "light heavy-weight" class—sized for every specific haulage requirement—and all with GMC traditional high quality—all priced down near the lowest!

new 3/4-TON



new 1-TON

new 1¼-TON

GENERAL MOTORS TRUCKS & TRAILERS

A RUGGED PRODUCT-FOR A RUGGED JOB

FOR DURABILITY and BEAUTY-

WE CHALLENGE

Larcoloid Leads

1. Acid and alkali resisting.
2. Dries hard in one hour.
3. Out of tack in 30 minutes.
4. Has adhesion second to none.
5. More durable than lacquer.
6. Easily sprayed or brushed.
7. Leaves no brush marks.
8. Safe! Contains no gun cotton.
9. Has high insulating quality.
10. 37 colors and black and white.
11. Applied on any clean surface.
12. No trick thinner needed.
13. Not affected by alcohol.
14. Clear Larcoloid will not print.
15. Does not raise undercoats.

THE tank trucks pictured above are part of a big fleet that operates from Maine to So. Carolina. They haul Bunker Oil one way and Gasoline the other. After unloading the oil it is necessary to clean the tanks inside and out with live steam.

That Larcoloid has stood this severe test with flying colors is proven by the fact that it has been adopted as the fleet standard finish. That means DURABILITY.

Automotive Finishers Enthusiastic

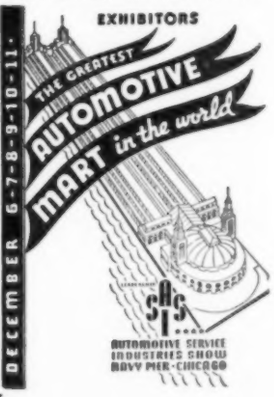
Finishers all over the country are enthusiastic over Larcoloid, the Perfect 1-Hour Dry Enamel. It has furnished the solution to their difficult modern day finishing problems.

No other finish possesses all the important and desirable features found in Larcoloid. It is in a class by itself, combining all the smooth, hard, lustrous qualities with the ability to resist acid and alkali to a degree found only in special finishes designed for that purpose alone.

If it is speed, lustre, flexibility, adhesion and durability you want, you want Larcoloid.

See our display at the "Automotive Mart" show

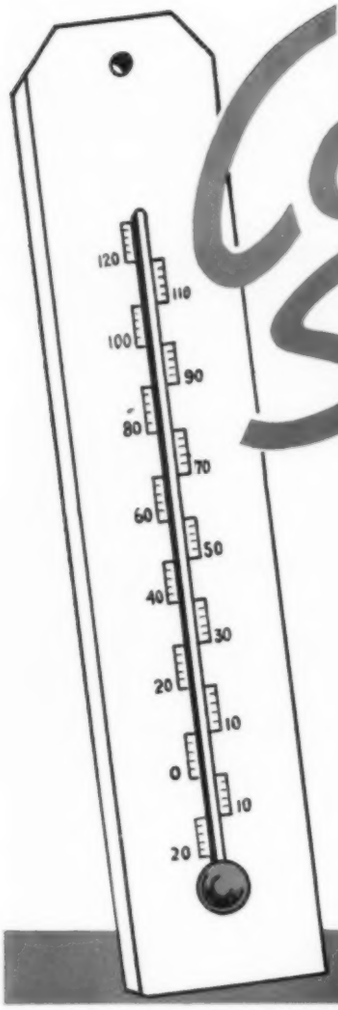
DECEMBER 6-7-8-9-10-11-



Larkin Co Inc.
BUFFALO, N.Y.

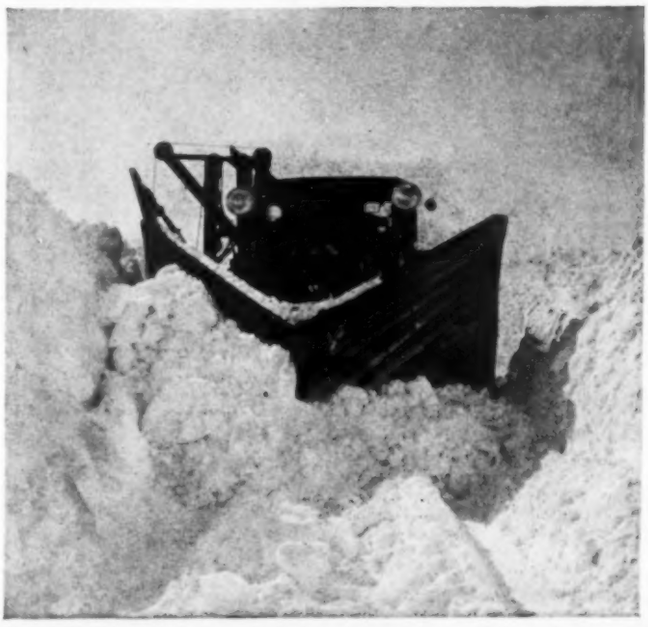
Paint Division

Cold Starting!



Just touch the button and the Cummins Diesel starts instantly. No choking. No coaxing. No warming up. Its extreme flexibility says "Yes" to every throttle change. Owners claim that the Cummins Diesel starts easier than any other internal combustion engine . . . . gas or diesel.

Get the facts. Learn why *cold starting* has *always* been characteristic of the Cummins Diesel . . . why its fuel distribution and injection system, different from all other diesels, is positive assurance that the Cummins Diesel will start instantly even in sub-zero weather. Ask for Bulletin FS-100. Cummins Engine Company, 1102 Wilson Street, Columbus, Indiana.



CUMMINS *Dependable* DIESEL

PIONEER IN MODERN DIESEL DEVELOPMENT

No matter how *Light*

50% lighter — built of COR-TEN

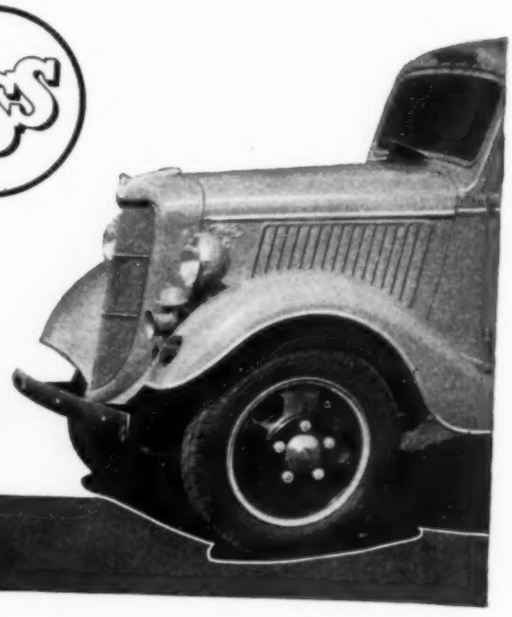
These 21-passenger buses of COR-TEN construction weigh 6400 lbs. They replace buses of same capacity which weighed 10,000 lbs. With less weight, there is less wear and tear on buses and it takes less time to start and stop. Higher schedule speeds enable you to increase the frequency of service with the same number of units—or to give the same frequency of service with fewer units.

USS

MAN-TEN-built — weight savings up to 40%

"This new unit design and the application of high-strength, low-alloy steel (U·S·S MAN-TEN) enables us to produce low gross weight trailer vans of exceptional strength, style and appearance. Weight savings over conventional equipment average around 25% for the smaller units, up to 40% on the large units. This exceptional light weight makes it possible and practical to use a definitely smaller tractor."

Excerpt from catalog of Herman Body Company, St. Louis, Missouri.



you want to build

. . . you need not sacrifice the strength and safety of STEEL

LIGHTWEIGHT equipment offers many advantages.

It consumes less gas and oil. It permits increased passenger capacity. It makes possible higher rates of acceleration and deceleration, with resultant faster schedules. "Building light" is the way progressive bus operators are building more efficient modern equipment.

In U·S·S High Tensile Steels we offer a family of modern steels so strong — so tough — so resistant to shock, stress, fatigue, abrasion, and wear—that by their use, strength and life equal to that of conventional equipment can be secured with substantially less weight. These new steels weigh the same per cubic inch as all rolled steels, but because they carry exceptionally heavy loads per unit of section, they rank among the most effective materials for weight reduction. The result: fewer pounds of metal to buy . . . to move . . . to start and stop.

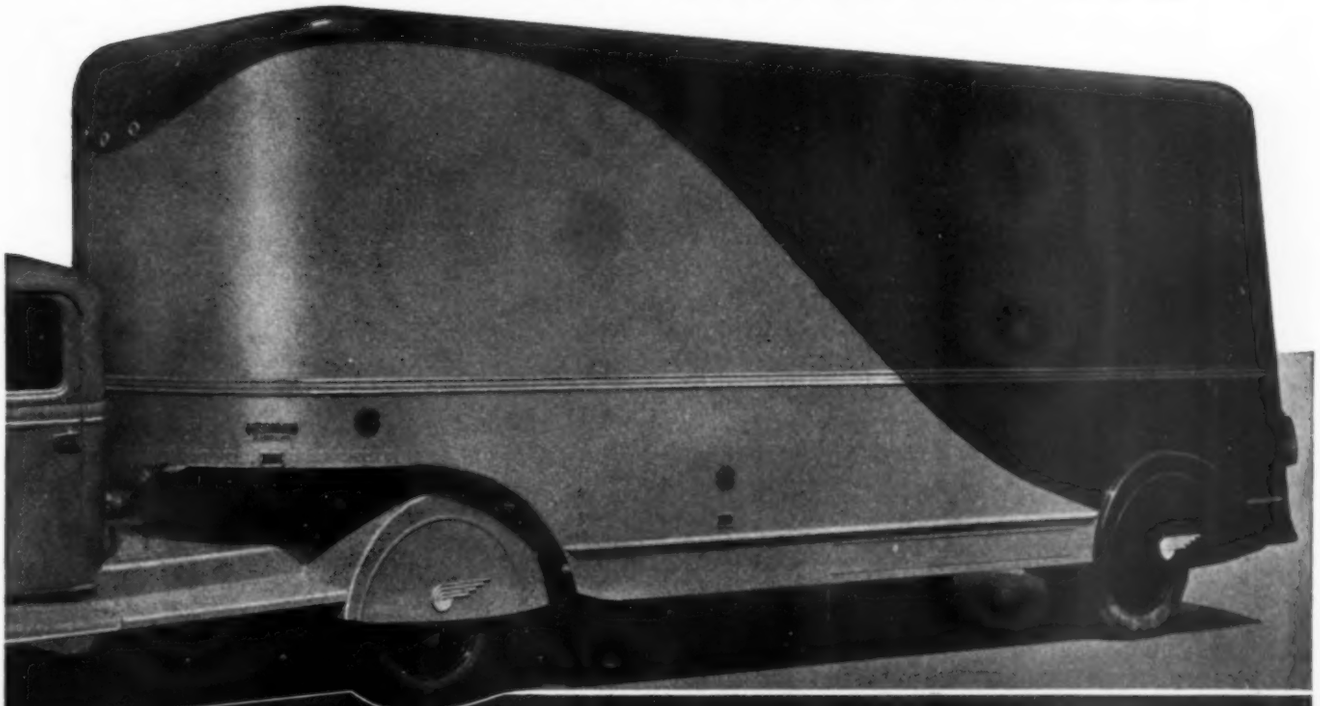
With U·S·S COR-TEN, MAN-TEN, and STAINLESS, you have a complete range of steels with a wide scope of desirable properties from which to choose. Used singly or combined, these steels make possible almost any desired combination of lightweight with other useful properties.

That's why our engineers are free to help you achieve the most satisfactory solution for your requirements. They have no interest in promoting any special type of steel construction — merely an unbiased interest in offering you the best possible recommendations.

U·S·S HIGH TENSILE STEELS

AMERICAN STEEL & WIRE COMPANY, *Cleveland, Chicago and New York*
CARNEGIE-ILLINOIS STEEL CORPORATION, *Pittsburgh and Chicago*
COLUMBIA STEEL COMPANY, *San Francisco*
NATIONAL TUBE COMPANY, *Pittsburgh*
TENNESSEE COAL, IRON & RAILROAD COMPANY, *Birmingham*

Columbia Steel Company, San Francisco, *Pacific Coast Distributors* · United States Steel Products Company, New York, *Export Distributors*



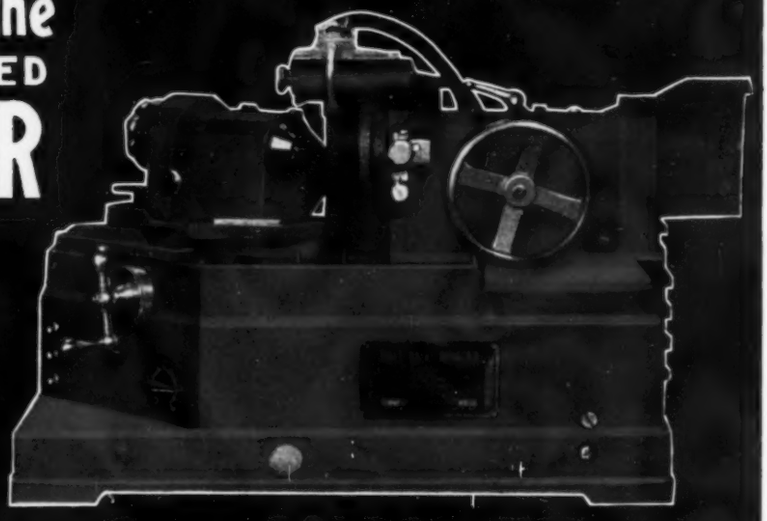
UNITED STATES STEEL

THIS BIG STELLITE FACED VALVE

AND THIS LITTLE CAST IRON VALVE

Both Require the Same Finish and Precision in Refacing

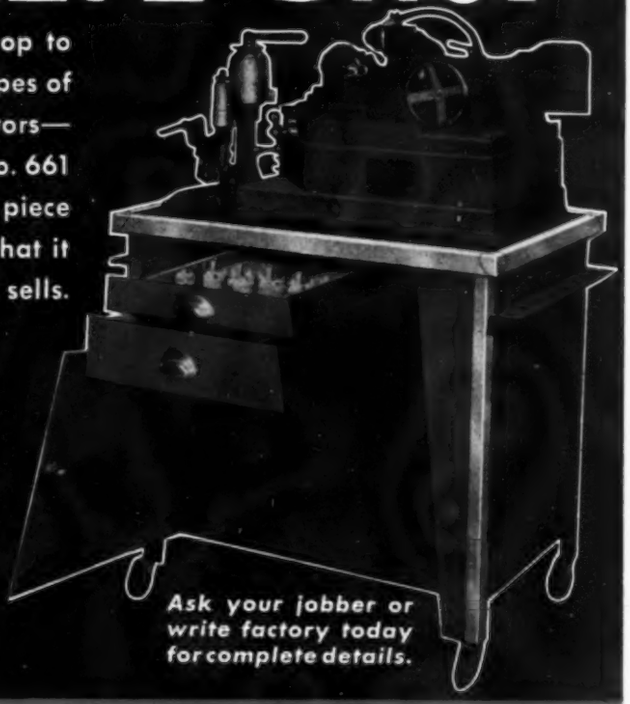
That's Why You Need the HALL VARIABLE SPEED WET TYPE REFACER



Wet Grinding assures precision with no heating or distortion. ***Rheostat Control*** adapts grinding speed to valve head size and metal for finest finish. ***Micrometer Feed*** permits removal of exactly the desired amount of metal from face or stem. ***Built-In Light*** and many other exclusive features.

HALL COMPLETE VALVE SHOP

The ***Hall*** Complete Valve Shop enables any shop to render a complete reconditioning service on all types of valves and valve seats for all cars, trucks and tractors—and with production precision. Owners of this No. 661 Valve Shop tell us it is not only the most attractive piece of shop equipment on the market today, but that it quickly pays for itself in the extra valve jobs it sells.



The No. 661 Valve Shop pictured here includes heavy sheet steel cabinet beautifully finished in red and royal blue with chromium trim, No. 60 wet type variable speed Refacer and the ***Hall Eccentric*** Valve Seat Grinder complete with Grinding Wheels and Pilots for servicing all passenger cars. Or if desired, Cabinet, Refacer or Seat Grinder may be purchased separately.

Ask your jobber or write factory today for complete details.

THE HALL MANUFACTURING CO.
1620 Woodland Ave. Toledo, Ohio

HALL WET TYPE VARIABLE SPEED VALVE REFACER

VOL. 19
NO. 6

FLEET OWNER

DECEMBER
1937

DEVOTED TO THE BETTER OPERATION AND MAINTENANCE OF TRUCK, TRAILER, BUS, TAXICAB, PASSENGER CAR, AND ALL AUTOMOTIVE FLEETS.

Stripping *the* Thread » »

(The Editor's Column)

TRUCK SHOW SUCCESSFUL

● Most of the new truck models which were illustrated and described in our last issue (and some are in this issue) were shown to the public for the first time at Newark's fourth annual National Truck Show, held last month. . . . Although the attendance at this show did not live up to expectations, it reached a total of over 40,000 souls. . . . It is estimated, from reports received, that more than $2,000,000 worth of vehicles, bodies and equipment was sold during the show. . . . Visitors at the show had the opportunity to inspect all types of trucks, of which there were 145 different units, as well as engines, accessories and parts. . . . In a few words, the show was a success. . . . Next year, the *fifth* annual National Truck Show will be held in New York City, at the Port of New York Authority Building. . . . It is expected that the entire floor will be used for exhibitions—a total of 120,000 square feet. . . . We'll tell you more about it when next October rolls around.

●

TRANSPORTATION MEET

● The S.A.E. held another series of interesting "transportation meetings" in conjunction with the holding of the National Truck Show at Newark, N. J. last month. . . . A fine assortment of papers was presented, covering much in the way of truck and bus operation, maintenance, design and selection of vehicles. . . . The last session of these meetings will be remembered by many as one in which the merits of semi-trailers and six-wheelers were discussed. . . . We felt pretty good about it, because our Question-of-the-Month survey on the subject of trailers was quoted from, quite freely, both by those who agreed with it and by those who didn't. . . . Thanks, very much, gentlemen, we'll try to do the same for you some day.

●

GREETINGS!

● It's much too early to extend the Season's Greetings; that's the penalty we have to pay for bringing our publication out on time. . . . We're not the kind that can "wax sentimental" about holly, good cheer, and all that sort of stuff, but we will suggest, in a *practical* way, that you use more Christmas Seals this year.

. . . The original and authentic Christmas Seal is reproduced here. Every penny that you spend for them contributes to a most worthy cause; the organization repsonsible for this work is quite deserving of everyone's support. . . . Perhaps we are a bit early in talking about Christmas; there's little that we can do about it but say it now; so here goes: *"Merry Christmas"*—and a *"Happy New Year"* too!

●

TRAILER DATA

● Here are some "figures", if that's what you're after. . . . In the past five years the use of semi-trailers in connection with tractors has increased some 800 per cent. . . . Approximately 10 per cent of all vehicles (trucks) operating in major trucking centers are tractor-semi-trailer combinations, and in certain localities this figure reaches as high as 25 per cent. . . . These figures come from Rufus Jones, Trailer Sales Manager of General Motors Truck, who also points out that common-carriers and bulk-freight haulers throughout the country have standardized practically 100 per cent on tractor-semi-trailer combinations. . . . In summing up his "brief" for the tractor-semi-trailer, Mr. Jones points out that manufacturers and distributors of goods of all kinds use tractor-trailers to shorten the hours necessary to move goods from one city to another, or from railroad to warehouse; that department stores, which handle and sell much bulky merchandise, such as furniture, carpets, stoves, etc., find the tractor-trailer a useful vehicle; that breweries make extensive use of this type of equipment for keg and case delivery to distributing points. . . . He also points out that everyone must by now be familiar with the huge white dairy trains which haul bulk milk from the farms to pasteurizing plants, and in turn, transport it to their distributing headquarters. . . . The figures, gentlemen, are Mr. Jones'. . . . We're simply passing them along to you for whatever they may be worth.

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H. Clay Fischer
Editor

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The Editor's Column » »

(Continued from Page 15)

SAFE OPERATOR

● Holding the silver plaque which he won in Class A-5 as the Safety Award of the American Trucking Associations, Inc., Robert T. Elliott (right) of Philadelphia, Pa., is shown

being congratulated at the presentation by H. H. Kelly, Washington, D. C., Safety Director, Bureau of Motor Carriers. . . . Mr. Elliott, superintendent of transportation for the Philadelphia Coke Company, received his honor during the opening sessions of American Trucking Associations' fourth annual convention held in Louisville, Ky., last month. . . . Our congratulations, too, Mr. Elliott! . . . And thanks to the *Courier-Journal and Times* of Louisville, for the photo.

●

AUTO SHOW NOTES

● By the time you read this, most news of the Automobile Shows will be quite stale—all because the dailies and weeklies have done a fine job. . . . Your Editor spent considerable time there, as he did at General Motors' and Ford's private exhibitions. . . . Of course you know what the new body styles look like by now. . . . The most important improvements have been the redesigning of front-ends and the trend towards mechanical gear-shifters of various kinds. . . . The "house-trailer" industry was accompanied by less fanfare than last year; some even have ventured the opinion that it is going the other way. . . . You will recall that last year we voiced our own private and personal opinion that this might turn out to be another "miniature golf". . . . We might still be wrong, and we're not saying "We told you so" or anything like that. . . . Getting back to the Shows, there's nothing much more to report, save that attendance and sales did not live up to expectations at the New York exhibition, while at Chicago they "packed them in" and sales were far beyond anticipations. . . . All of which proves that East is East, or somethin', and that straws do not always indicate which way the wind blows.

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TRADE-MARK INFORMATION

● Acheson Colloids Corporation, Port Huron, Michigan, Points out that the words "dag" as well as "Oildag," "Aquadag," "Glydag," "Castordag," "Varnodag," and "Prodag," are trade-marks and not generic terms. . . . These names represent their brands of colloidal products in various mediums, and as such are protected by and subject to the usual trade-mark laws. . . . As you doubtless know, there have been many cases of litigation recently, in the matter of trade-marks and some of the controversies have not ended too happily for several of the interested parties. . . . The above information is offered, therefore, for whatever it may be worth.

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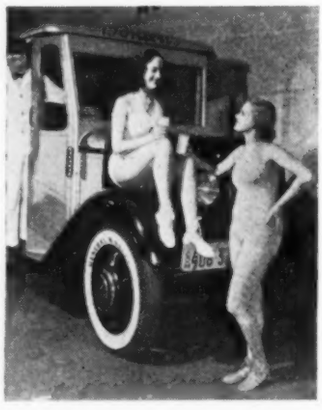
NATIONAL MILK WEEK



● Last month, *"National Milk Week"* was observed throughout the country. . . . To these two lovely girls, a milk-toast is something to be drunk, not eaten. . . . In order not to let the cows down, a camera-man accompanied a New York milk-man on his rounds recently, to see what happens to all the milk that the country's cows dispense every day. . . . He found many of our most charming girls on the Great White Way waiting for their daily glass or two of milk, which they say helps a lot to keep them healthy and beautiful. . . . Charlet Hiteman (standing) who was "Miss Kentucky" at the recent Atlantic City pageant, and Monajoy Gentry, of Evanston, are shown here drinking a toast to *"National Milk Week"* as the lucky driver (we don't know his name) looks on. . . . These girls say that *every* week is "milk week" for them. . . . The "catch" is that the tires are Generals and "Herb" Hoover, General's genial news director furnished the photo. . . . It's a nice-looking truck, too—or didn't you notice it?

●

NEW LUBRICANT?

● A new "addition agent" for motor oils has made its appearance. . . . This one is a jelly-like compound, which is packed in tubes, and is squeezed into the oil-filler neck, just as you would squeeze tooth-paste out of a tube. . . . Claims of the maker are that it becomes distributed throughout the oil in minute particles, each of which bears an electrical charge, which causes them to become attracted to the moving metallic surfaces and to cling there, even after the motor is stopped, thus building up a surface and preventing metal-to-metal contact. . . . Frankly, it's not our place to voice skepticism; neither should we become enthusiastic over new products. . . . We're simply mentioning the thing here because it sounds like "news" and our nose for news is *always* to the ground. . . . Further than that we do not know; and even if we *did* know, we couldn't tell you about it in this column anyway.

●

THE OLD AND THE NEW

● The contrast between the two Dodge commercial cars shown here illustrates the extent of the improvements that can be developed in the automobile industry in 15 years. . . . The Dodge at the top of the picture was purchased by A. A. Manza, Inc., of Jersey City, N. J., in 1922 and was so attractive in its day that its advertising value to its owner paid for it in three years, according to A. A. Manza, head of the firm. . . . Since the old

photograph was taken, the improvements in the designing of the engine, chassis and body have been almost too numerous to mention, as may be seen in the photograph of the 1937 Dodge commercial car that was recently purchased by the company.

Lowell Thomas gets tire facts at the Lehigh Warehouse and Transportation Co.

by LOWELL THOMAS
NEWS COMMENTATOR

"It's a man's-size job hauling foodstuffs and freight for greater New York. I found that out when I went to Newark, N. J. to ride one of the trucks of the Lehigh Warehouse and Transportation Co.

Each truck travels 60 to 75 miles a day through the world's heaviest traffic. One goes out loaded with tons of coffee, another with cornflakes, another with cans of orange juice.

"Altogether this big fleet handles some 90,000,000 pounds of merchandise annually. Food for the most part. Breakfast, lunch and dinner for the 26,000,000 people in greater New York and surrounding area. But they also haul drugs and soap, furniture and electrical appliances—dozens of products which come in by train and boat to choke their two huge warehouses."

I Talked to Drivers . . .

"To make the hundreds of daily store-door deliveries, trucks carry heavy loads, travel fast, must keep on schedule. Tire failures would throw the whole operation out of gear. I talked to drivers, to the maintenance man, to A. B. Drake, President. All had the same story—summed up in Mr. Drake's own words: 'Day after day, year after year, Goodrich Triple Protected Truck Tires have given us perfect service—have never failed us. This 100% performance proves that Triple Protection is the answer for present-day trucking operations'."

Lowell Thomas could tell you more of the things he found out in visiting this big-scale trucking operation. He could tell you of the high tire mileage obtained despite the grinding stop-start service. Of the next-to-nothing repair bills. Of the low cost per mile tire record.

Tires are Triple Protected

Such tire service doesn't just happen. It's the result of Triple Protection—a Goodrich invention that protects tires from sidewall breaks and blow-outs—increases tire mileage. This construction actually checks 80% of premature failures—saves money on every mile! Only Goodrich gives you this 3-way safeguard:

1 **PLYFLEX**—distributes stresses throughout the tire—prevents ply separation—checks local weakness.

2 **PLY-LOCK**—protects the tire from breaks caused by short plies tearing loose above the bead.

3 **100% FULL-FLOATING CORD**—eliminates cross cords from *all* plies—reduces heat in the tire 12%.

Why take the risk of sidewall breaks, big repair bills and shortened tire life when you can get Triple Protected Silvertowns at no extra cost?

Goodrich *Triple Protected* Silvertowns

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES

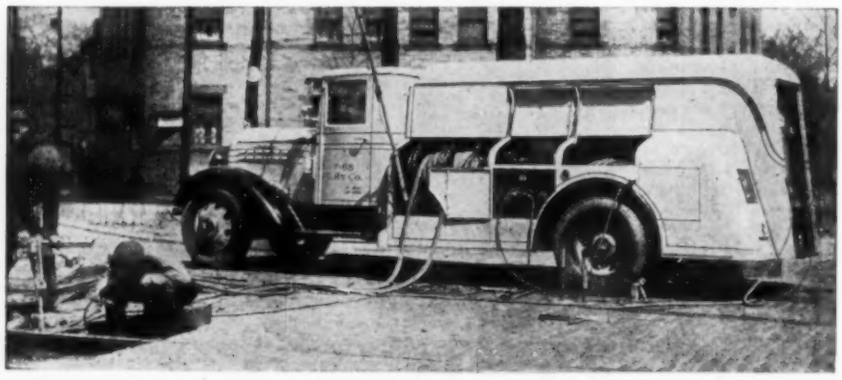
Stripping *the* Thread

(*Continued from page* 16)

PORCELAIN ENAMELED PANELS cover the body of this truck. . . . Therefore it needs no periodic painting and a simple washing keeps it looking new. . . . The panels, finished in an orange background with white letters and black outlines, are made of 16-gauge enameling stock. . . . They were cut out, fitted to the body and all holes were drilled before enameling. . . . "Long life and practically indestructible!" claims the maker. . . . Further information may be obtained from the Editor on request.

SODIUM LIGHTING EXPLAINED

● If you have been wondering what those new yellow "highway" lights are all about, this description, furnished by General Electric Company, should probably hit the spot. . . . Sodium lighting has been extensively developed and is now used in many localities for safety lighting on highways, bridges, etc. . . . The sodium lamp is a practical light source, simple in operation, using conventional alternating-current sources of supply, and adaptable to common installation practice. The reflector assembly and the simple auxiliary apparatus for the lamp are combined in a luminaire of unique appearance. . . . The golden light from the sodium lamp is a product of an electric discharge through an atmosphere of sodium vapor. This color is typical of sodium. The light is monochromatic—that is, all one color. It is generated at about three times the efficiency reached in large incandescent lamps, and at relatively low brilliancy. . . . The lamp consists of a tubular bulb with electrodes at each end. The leads are brought out at one end and connected to a pin-type base. It contains neon gas at a low pressure for starting, and a quantity of pure sodium. . . . The lamp is operated in an insulating jacket of glass cylinders, the outer two being sealed together and evacuated. This arrangement retains the heat needed to vaporize the sodium, which is normally a solid. . . . When first started, the glow is red—neon color. As heat is stored up, the color gradually becomes golden. It takes about 30 minutes to reach full output, although acceptable lighting conditions are reached within a few minutes after starting. . . . Effective use of the light generated is obtained, first by mounting the lamp horizontally and transversely to the roadway, and second, by using with it a special combination of reflectors made from a pure sheet aluminum, polished and anodized. This material gives high efficiency of reflection and excellent durability under exposure to weather, it is claimed. . . . The sodium lamp in its present form is best suited to lighting applications which can use a volume of light about equal to that of a 500-watt incandescent lamp, the characteristic golden color, and the relatively large physical size of light source; and which also involves prolonged burning (as distinguished from short-time intermittent operation) and an annual total of burning hours such that the saving in energy cost will be sufficient to justify the necessarily higher first cost of equipment. . . . Safety lighting for bridges and highways is just such an application; and during the last three years, thousands of sodium luminaires have been in satisfactory service in this field. . . . And that's about all we know about it. However, if any readers of this publication, especially executives of city, county and state departments, desire further information, a line to the Editor will bring completer details, without obligation.



MEN AT WORK. . . . With a new Mack Junior parked proudly by, men of the Cleveland Railway Company track maintenance force keep their minds on their jobs. . . . The unit, as you will note, is completely equipped for public utility work. . . . With all equipment stowed in the body, the streamlines are as neat as you please.

●

UPS ROLLS ITS OWN

● There recently has been completed in the New York shops of United Parcel Service, an "experimental" package delivery car. . . . Apparently not satisfied with existing designs, friend Bixby has decided to roll his own. . . . At this writing, they tell us, the first car has been completed for some time and has been found so successful in use that ten more are being built for the purpose of extended tests in comparison with other vehicles of standard make. . . . So far, it is claimed, the one car that has been completed and put into service indicates startling economies of operation and promises equal results in maintenance costs. . . . Yours Truly has witnessed the building of the first vehicle in various stages of construction and has noted some rather radical departures, a few of which are a tubular frame which becomes integral with the body as the assembly progresses—and a different type of cooling-system, something on the order of steam-cooling. . . . If enough of our readers will write and express interest in full details of this vehicle, we will go out and get a real first-hand description of it, with photographs and full specifications—that is, if Brother Bixby wills it. . . . At least, we ought to be able to get for you, within a year or so, *some* kind of an operating story which may prove that it is cheaper to build and operate your own. . . . But, very candidly, we doubt if it can be done by the run-of-mill fleet operator; we doubt if it can be done by *anybody*. . . . United Parcel Service enjoys a unique position in the field of fleet operation and perhaps, therefore, your "poison" might turn out to be *filet mignon* to them.

HYDRAULICS SCORE AGAIN!

18 MONTHS, PULLING 20 TON LOADS IS A REAL "TOUGH JOB" TEST!

Read this Fleet Operator's Letter NOW!

PHILADELPHIA
33-35 NORTH HANCOCK ST
36-38 NORTH MASCHER ST
KEYSTONE PARK 2227
BELL REGENT 6200

LOMBARD BROS. OVERNIGHT SERVICE FAST MOTOR FREIGHT

BRIDGEPORT
611 CARROLL AVE.
PHONE 5-7737

TRENTON N. J.
355 BERNARD ST
PHONE 5358

MAIN OFFICE
PHONE 4-2108
1844 EAST MAIN ST
WATERBURY, CONN.

PLEASE ADDRESS REPLY TO
Main OFFICE

September 10, 1937

Tapken-Young, Incorporated
18 Brown Street
Waterbury, Connecticut

Gentlemen:

I want to congratulate you on having signed up with the Wilkening Mfg. Co. for the distribution of Pedrick rings. From our experience with the Hydraulic rings we know you will sell plenty of them. Our first sets were installed eighteen months ago in five White's and have been operating between Philadelphia, Penn. and Waterbury, Connecticut carrying loads of 40,000 gross. We have installed them in both rering jobs and rebore jobs with equally outstanding results. These rings save us gas and oil and lengthen the period between overhauls.

The idea of packaging these rings in "tailored" sets simplifies our ordering, and gives us confidence that we are making each installation strictly in accordance with the manufacturers recommendations.

Wishing you great success in the sale of this wonderful product, I am

Sincerely,
by Alfred Ragozzine
Maintenance Superintendent

AR:GML

Thousands of giant busses and monster trucks in the toughest kinds of service, are thundering over the highways of the world equipped with

Pedrick

HYDRAULIC PISTON RINGS

Day after day they prove by their unfailing performance that Pedrick Hydraulics are the very zenith of excellence among piston rings.

No wonder Pedrick Hydraulics have been selected above all others for approval and use in their official service work by many of the outstanding truck, bus and engine producers of the country—the only piston ring to enjoy such distinction, a distinction earned by phenomenal results under all conditions in the field.

Follow the lead of those having the greatest experience with the toughest jobs. Use Hydraulics yourself

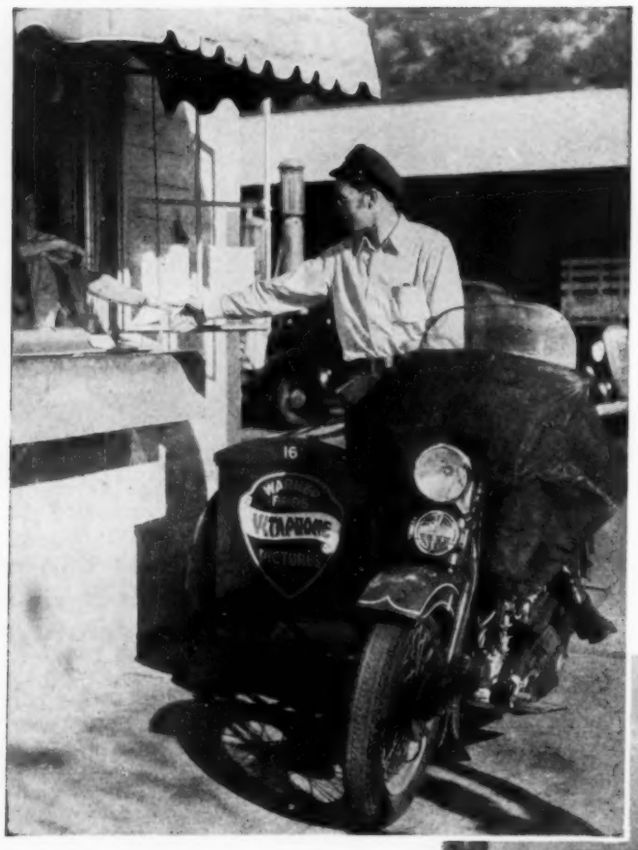
WIRE or WRITE and our FLEET SERVICE ENGINEER will call promptly

Wilkening Manufacturing Co. *Philadelphia*

Export Dept.: General Motors Corporation, Export Division, New York City
In Canada: Wilkening Manufacturing Co. (Canada) Ltd., Toronto

"BACKSTAGE" MUST be GOOD

YOU may not have imagined it, but a fleet plays an important part in the production of those fine movies we see nowadays. . . . Here's Warner Brothers' fleet story, direct from Hollywood headquarters and our correspondent, A. B. Laing.—H. C. F.



ABOVE is shown one of Warner Brothers' special Hollywood messengers, leaving for "location" with a special dispatch. . . . A fleet of these are operated, in addition to the trucks and passenger cars. Trip orders of this kind average 275 daily at this Hollywood movie lot. . . . At the right we see genial "Art" Klein, head of Warner Brothers' Transportation Department, seated at his desk in the Company's garage at Burbank, Calif.

MAYBE it has never occurred to you that the large motion picture companies operate fleets of automotive vehicles. They do. And such fleets are given the same kind of careful, intelligent attention as other fleets enjoy. The motion picture business is a serious one, even as yours and ours. Costs have to be watched. Accidents must be prevented. Intelligent supervision and well-worked-out maintenance programs are found, out in the fleets of Hollywood, very much like they are found in New York, Chicago and other industrial centers.

This interesting narrative will attempt to tell you something about the operation and maintenance of the Warner Brothers fleet of cars, trucks and motorcycles. Arthur H. Klein, better known as "Art," heads up the transportation department of Warner Brothers and is the individual responsible for the doings of the fleet—and for this article.

Recently "Art" attracted much attention to himself at the film capital by instituting a well-defined program whereby his company reduced both overhead costs and occupational accidents. At our last visit, the Warner Brothers fleet consisted of 75 trucks, 10 tractors, 25 trailers, 6 buses, 100 passenger cars, 6 taxicabs and about 10 motorcycles.

In his new program, "Art" first dealt with the many annoying traffic snarls (that they used to have) within the garage and shop. Crowded garaging that occasioned delays in work routine was solved in the very obvious way—an entirely new building was erected, 110 x 170 feet; large enough to yield plenty of maneuvering space for the existing fleet, and flexible enough to take care of new purchases of equipment for some time to come.

The new building is of reinforced concrete construction—even to the roof slabs—affording ideal fire protection and an inexpensive and efficient method of voiding the effects of carbon monoxide from moving cars when disconnected from their new carbon monoxide exhaust hose system.

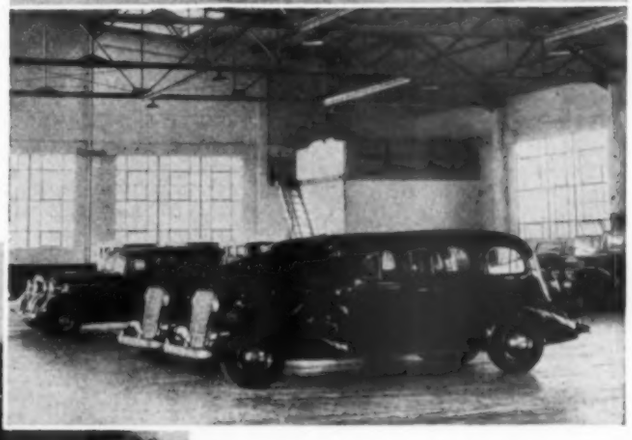
"Art" installed new portable lubricating pumps which could be attached to any convenient electrical outlet. He installed modern lubrication pits and much in the way of new shop equipment, too numerous to mention here. Among the notable items are found complete 1937 welding equipment—portable gas, elec-

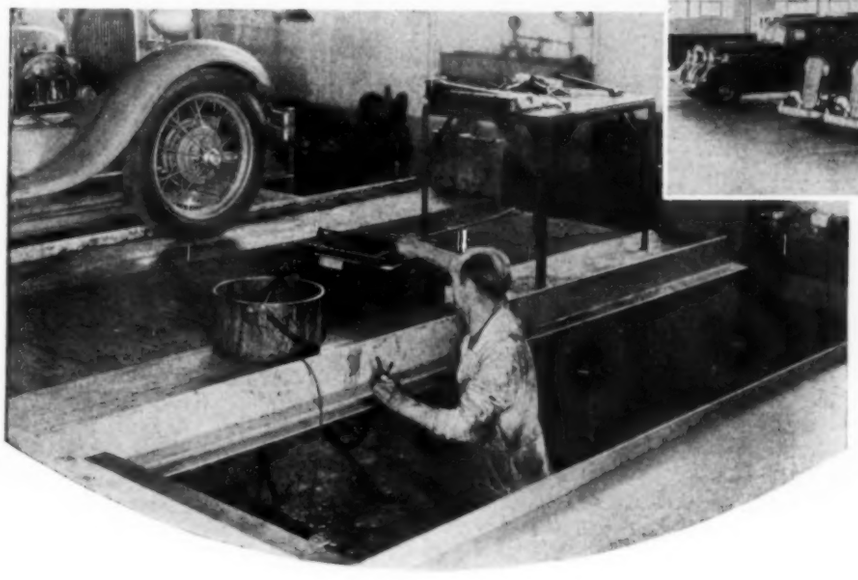
MAINTENANCE *in* HOLLYWOOD

An Interview with

Arthur H. Klein,

Transportation Manager,
Warner Brothers Pictures, Inc.,
Hollywood, Calif.





FLEETS of passenger-cars, trucks and motorcycles are operated by Warner Brothers. Practically all types of vehicles are represented therein. A few of them are shown above. . . . At the left is a view of one of Warner Brothers' flood-lighted, steel-lined service-pits in the Hollywood garage. . . . Note the workbench, easily accessible. Adequate ventilation is provided, facilitating rapid exhaust of noxious gases.

tric and spot.

Next, the entire fleet of rolling stock was called in and placed before a "medical board." Art and his head foreman personally examined every motor vehicle —truck, tractor, trailer, bus, passenger-car, taxicab and motorcycle. Any and all units that could not be economically reconditioned (after careful examination) were instantly retired from service. Most of this weeding-out, incidentally, took place among the truck fleet.

Then eight newer and bigger truck units were immediately ordered and plans were proposed to trade-in the remainder for new ones from time to time, until the entire existing fleet should have been replaced by more modern trucks, all to be capable of a speed, loaded, of 50 miles per hour.

As the next step in this interesting program, each of the 160 employees of the transportation department (including mechanics, messengers, inspectors, etc.) was given a mimeographed set of rules. These rules read:

1. Stay out of the garage at all times, except when your duties call you there.

2. Be prepared to drive any unit at any time—car, truck, etc.

3. Remember the "No Smoking" rule when you are driving.

4. Remember that you are taking your own chances when you exceed the legal speed limit or violate any traffic laws. Speed limit on the Warner Brothers lot is 8 miles per hour for all equipment. Speeding, either on the lot or on highways, is prohibited. No vehicle is to be driven in excess of the legal speed limit at any time.

5. Be sure to fill out your trip ticket in every detail.

6. Report mechanical troubles on all equipment immediately, and make out a Shop Order on the spot.

7. Report faulty brakes on any equipment immediately, and make out a Shop Order on the spot.

8. Turn in every vehicle for oil changes on each even-1,000-mile speedometer reading.

9. Check gasoline, light-bulbs, oil, water and air after every trip, using gauges and charts supplied by the manufacturers for the purpose.

10. Be sure that tail-gates and side-gates are in

(*Please turn to page* 22)

place and hooked before starting any vehicle. Do not leave them lying around the lot, but carry them on your vehicle at all times.

11. Change all flat tires at once. Do not run on underinflated tires.

12. Be extremely careful whenever driving any vehicle. Do not drive over obstacles or obstructions that might possibly damage the tire casings. Carry inner-tube repair kits at all times. Report once each month for inspection of all car tool kits, jacks, etc., to make sure that they are in proper order.

13. Be sure to turn in all empty or partly used fire-extinguishers.

14. When our vehicles are on "sets" of pictures, keep "extras" and other players out of them. Watch passengers carefully to see that no tobacco embers damage the upholstery.

15. Report all accidents to this office immediately after they happen.

16. Failure to abide by these regulations puts you in line for immediate dismissal.

"By dismissal," Art Klein explains, "we mean that the employee is sent to the office immediately for his 'time' and he is not permitted even to complete the day's work. This might sound very arbitrary, we admit, but these drastic measures are for the public good and are really in the interests of the men themselves.

"Their constant watchfulness is the price we ask our men to pay for the good wages and the pleasant working conditions enjoyed here. Strict enforcement of these rather rigid orders has eliminated all careless drivers and mechanics from our payrolls. Maintenance costs have been sharply cut, while our department, with some 275 trip orders daily, has driven down the accident rate to almost nothing."

ANOTHER view of "Art" Klein alongside one of his big six-wheelers of the Warner Brothers' fleet. . . . The lower picture shows the bulletin board used in the no-accident campaign at Warner Brothers. Prizes are awarded for the best traffic records of all departments. . . . Jane Wyman, Warner Brothers Starlet, is shown affixing one of the gold stars.

Maintenance practices in fleets are always found interesting, and those followed at Warner Brothers' fleet shops are no exception. The fleet of trucks, which ranges from 1½ to 7½-tonners, carries materials and equipment averaging 8 to 15-ton loads. These vehicles are called on to handle a variety of goods. One day a truck might be transporting mining machinery to a distant ranch-site. The next day it may be called upon to carry an uprooted pine tree 200 feet long, which is to be set up at some other location. Another day might provide the job of carrying cages full of wild animals.

Loads, as a general rule, are bulky rather than heavy. By far the greater number of trips are short-hauls within the 200-acre enclosure of the "lot." "Flats" (wall-sections of "sets") are constantly being shifted, day and night, from one sound stage to another, and these rather light but extremely awkward loads are handled by the heavier trucks.

The passenger-cars are used to haul personnel, stars, extras, etc., while the motorcycles are used mostly for messengers doing dispatch work. A typical send-off of a motorcycle messenger is shown in one of the pictures at the head of this article.

Brakes, of course, are very important in this fleet which operates sometimes under enforced speed conditions amid the "hurly-burly" of motion picture production. Art Klein has equipped his entire fleet of trucks (up to 3-tons capacity) with vacuum boosters for the hydraulic brakes which they use. The larger trucks are equipped with air-brakes, which have proven very satisfactory, according to Art Klein.

Oil-filters are used on all cars and trucks in the fleet. One popular make is used almost exclusively. These, Mr. Klein says, obviate the necessity of frequent oil-changes and the savings through their use run up to several hundred dollars a year, he figures.

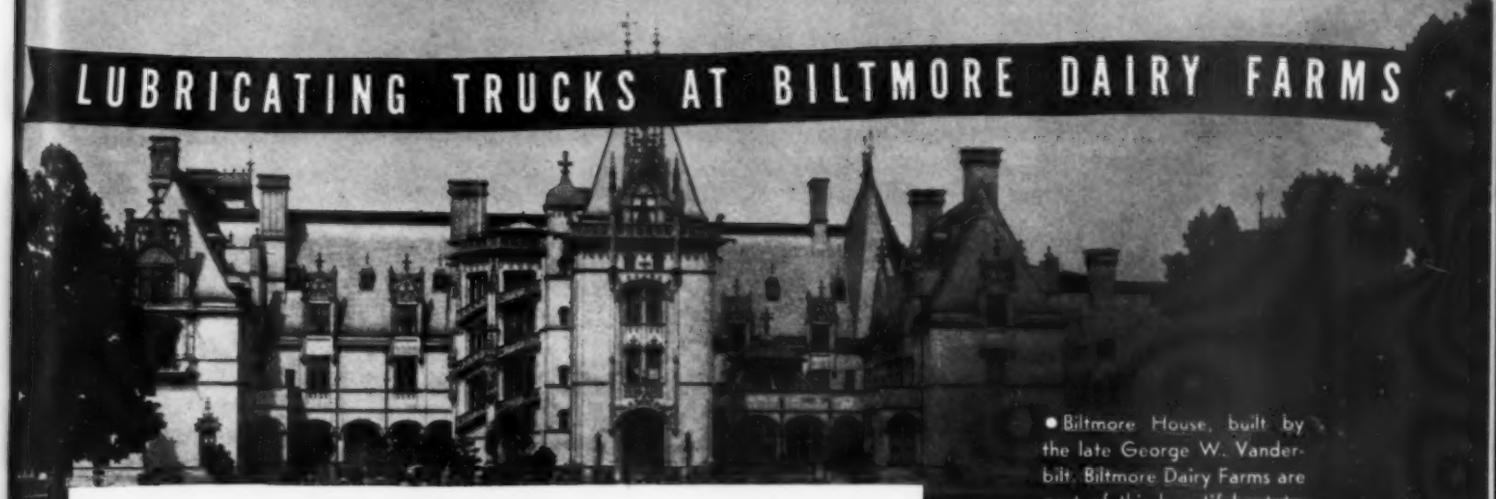
In the matter of running maintenance and major overhauls, the movie fleet man is perhaps in a position to enjoy a greater advantage in the way of shop equipment, than his brothers in many other types of fleet garages in other industries, inasmuch as Art Klein's maintenance department has access to one of the most completely equipped machine shops on the Pacific Coast.

Warner Brothers Studios (the picture-making department) has its own blacksmith, painting, electroplating, armorer's, jeweler's, hardware and carpenter shops, equipped with all the mill and foundry machinery necessary for the creation of screen effects, stage properties and sets. These are located immediately adjacent to the Transportation Department, and, incidentally, Art Klein also has charge of these several acres of plant maintenance.

As to shop equipment of the automotive type, there is plenty too. Bearings, for instance, are line-bored and valves are refaced on patented machines which turn out work like new and are marvelous time-savers. Six welding outfits are used, in all. Then there's a lathe with a thirty-foot bed; another lathe that will swing a 48-inch diameter; and a boring-mill with a 48-inch capacity. There are 12 lathes in Klein's shops, all told. Two new shapers have recently been installed; also a threading machine, which save running over to machine shops when a special bolt or stud needs atten-

(*Please turn to page* 68)

LUBRICATING TRUCKS AT BILTMORE DAIRY FARMS



● Biltmore House, built by the late George W. Vanderbilt. Biltmore Dairy Farms are part of this beautiful estate.

Biltmore DAIRY FARMS BILTMORE ESTATE

Biltmore, North Carolina

April 30, 1937.

Mr. G. K. Leemon, Distributor,
Macmillan Ring-Free Oil,
109 Linden Avenue,
Asheville, North Carolina.

Dear Sir:

It gives me pleasure to write you my experience with Ring-Free oil. When you first suggested the use of this oil I was naturally skeptical as I listen almost daily to claims put forth by salesmen of the virtues of lubricants and automobile contrivances but I must say that to date each assertion made by you as to the performance of this oil has proven true beyond my expectations.

I might mention one particular instance in which we are using this oil, viz: in our transport truck between Asheville and Charlotte. This truck is operated on this run each day in the year carrying practically the identical load on each trip, and in the hands of the same drivers. This truck has shown an average daily saving in gas consumption of 25.6% without any increase in the consumption of oil. Our other trucks in which we are using this oil have shown almost a similar saving in gasoline.

I am indeed delighted that you persuaded me to use this oil and will keep you informed of its performance as we gradually place it in all our trucks.

Yours very truly,
W P Paquette
Supt. of Garage.

● The Asheville-to-Charlotte transport truck that proved RING-FREE saves fuel.

Saves 25.6% on gas consumption

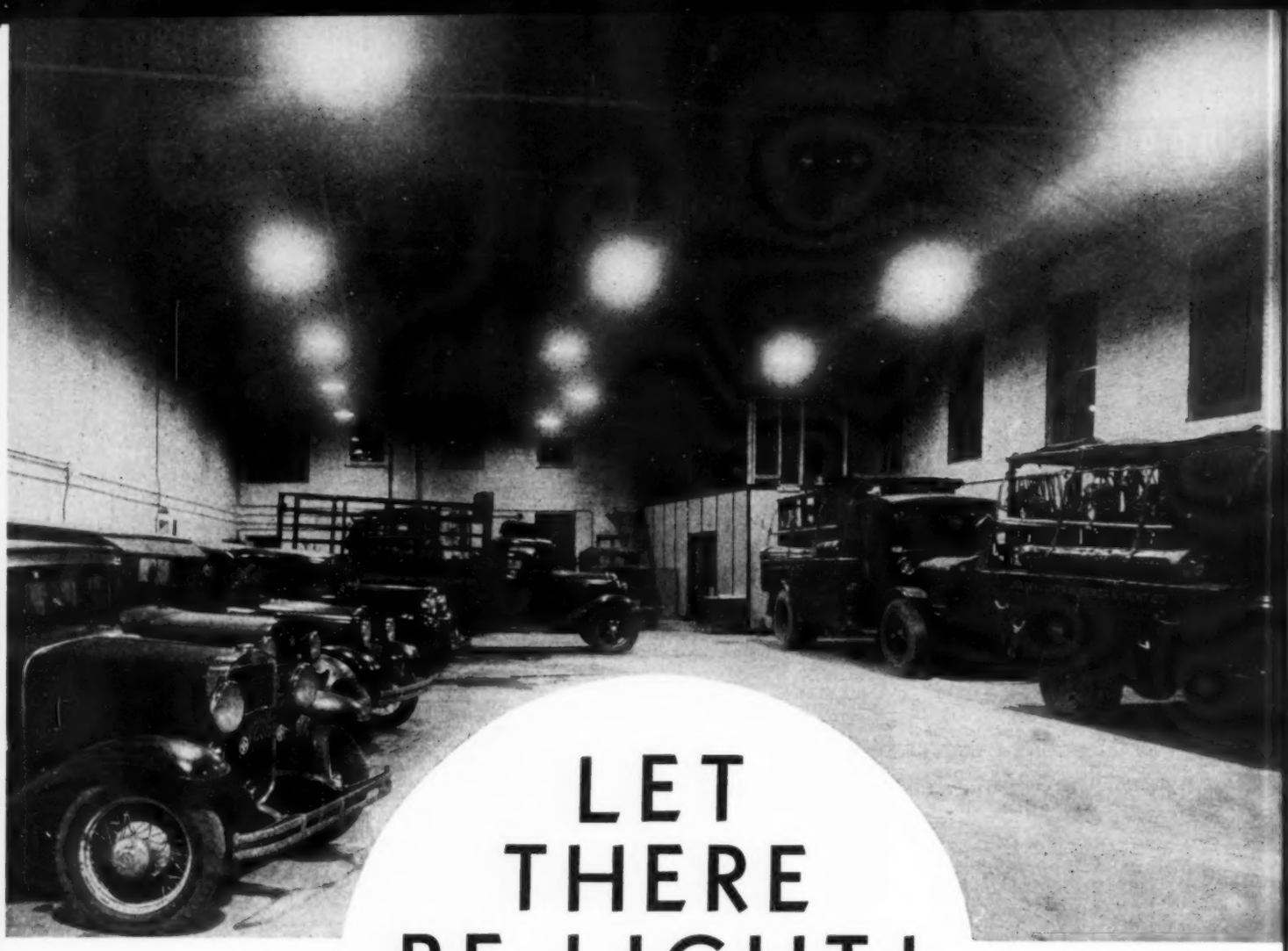
MACMILLAN RING-FREE MOTOR OIL

1. GREATER FILM STRENGTH
2. HIGHER HEAT RESISTANCE
3. LONGER CLING TO METAL
4. FASTER PENETRATION
5. REMOVES HARD CARBON
6. IS NOT CORROSIVE

Sold only in REFINERY SEALED CONTAINERS Never in bulk

● Every fleet operator has listened to "claims put forth by salesmen." Frankly, we don't blame such operators for being skeptical. The Macmillan Man is equipped to prove every claim he makes for RING-FREE. Let him prove that RING-FREE lubrication reduces both maintenance and operating costs.

MACMILLAN PETROLEUM CORPORATION
530 W. 6th St., Los Angeles; 50 W. 50th St., New York
and El Dorado, Arkansas



This well-lighted garage utilizes 400-watt, high-intensity mercury vapor lamps.

LET THERE BE LIGHT!

(In Your Shops At Night)

•

By Samuel G. Hibben,

Director of Applied Lighting, Westinghouse Lamp Div., Bloomfield, N. J.

The 25 foot-candles of light thus produced may be decreased 25% if not cleaned regularly.

WHEN illumination is purchased, the buyer should rate his purchase on the basis of sustained "seeing ability" per dollar spent. The cost per kilowatt-hour for electric power is a prime factor only when one knows how efficiently this power is translated into light. The cost of the lamp bulb is a factor only when we know how much and what quality of radiation it emits. The worth of reflectors and accessories is indeterminant until we know just how they redirect and continue to redirect the light to the work. Even so, we must yet reckon with the light that may efficiently come from the lighting unit, but be lost through absorption in surrounding objects or surfaces before it can reach the work under observation.

To a large degree our final criterion, "seeing ability", depends upon the coordinated efficiencies of all such factors. If the efficiency of any one of them is low or is allowed to fall off, then such a weak link weakens the chain and nullifies the good work of the neighboring components.

High Cost of Low Maintenance: Watch the losses through the neglect of the lighting installation, *i.e.*, the *high cost of low maintenance.* Take council upon how to guard against the insidious losses resulting from such items as low voltage, improper or aged lamps, dusty reflectors, dirty walls and ceiling surfaces, empty sockets—*poor housekeeping!*

If all our lighting installations and their immediate surroundings could be cleaned and reconditioned today, then the illumination that this nation would receive tonight would be well-nigh twice the amount that it enjoyed last night.

Where maintenance is poor and lighting systems depreciate, the losses due to neglect may be roughly classified as follows: 1. Dirty lamps and accessories. 2. Darkened or discolored walls and ceilings. 3. Lamp bulbs of poor quality or low efficiency. 4. Empty sockets and unobserved burn-outs. 5. Aged lamps, past their prime of usefulness. 6. Under-voltage burning of lamps. 7. Improper combination of lamp and reflector.

Water Cheaper Than Watts: Consider first the advantages and costs of keeping the lighting equipment clean. "Water is cheaper than watts" but in spite of that, we would be appalled if we knew how seldom lamps and reflectors are properly washed. Of all our public or private servants, the most conspicuous by their absence are the Gold-Dust Twins,—yet washing is vital to our net objective, *seeing ability!*

An Example or Two . . . Many commonplace examples exist to demonstrate the importance of removing

films of dust and grease from the lighting units. For example, a Glassteel Diffuser in a somewhat smoky machine shop when new, produced over 12 foot-candles of illumination on the work-bench beneath. It had so gradually gotten dirty during weeks of neglect that less than 3 foot-candles finally resulted, meaning that the cost of light on the work had quadrupled. It meant that out of every dollar spent for electric power and lamp bulbs, 75 cents was being wasted.

During the investigation of a certain large office building where the lighting units consisted of semi-indirect bowls that appeared from the floor to be perfectly clean, we measured the average room illumination, then removed the glass bowl and washed it thoroughly, replaced it and found that the foot-candles were increased from 1.8 to 2.4, or 33 per cent.

A third not uncommon example may be taken from a building in this city. The totally indirect lighting system after some two years of operation was the subject of dissatisfaction. Some 3.75 foot-candles were measured on the desk tops. First, the reflectors were thoroughly cleaned. The foot-candles were increased to 4.68 or a gain of 25 per cent. Since the lamp bulbs were visibly aged and dirty, new lamps were installed and the foot-candles moved up to 5.56, or a gain of 40 per cent.

The ceiling was repainted from a yellowish cream to a lighter tint and the foot-candles grew to 6.78 or a total gain of 81 per cent. Examples of this sort multiply indefinitely.

Of course one must expect a continuous depreciation due to the continuing deposits of dust on reflectors and the continual aging of lamps. However, this falling off in efficiency is not a straight line function. Usually the greatest losses occur in the first month or six weeks. (Some 15 per cent in the first month is perhaps a fair average.)

Dust deposited upon old dust is not so costly as is the first thin layer. The loss of light from the normal and unavoidable depreciation of the lamp bulb itself from internal blackening seldom brings the final output of that lamp below 90 per cent of its initial efficiency.

However, blackening does continue as almost a straight-line slope and hence a very aged lamp bulb can economically be removed and replaced by a new one should it be found to live much beyond its rated life.

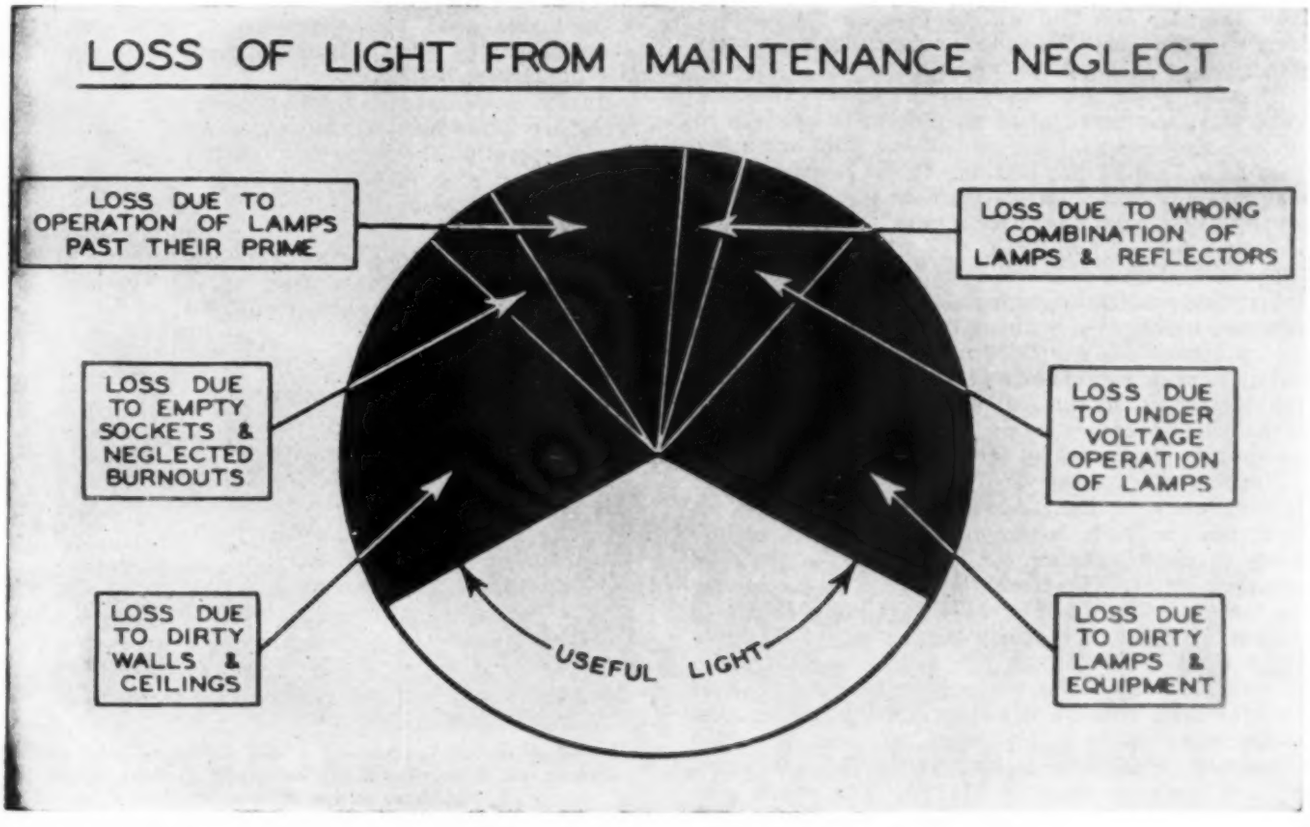
Keep Bulbs and Fixtures Clean: In any discussion of economics one naturally asks the question, "How should lighting equipment be cleaned and what does it cost?" In general, the experience of past years has shown that bulbs and reflectors should be wiped free of dust at least once each month. Except in unusually dirty locations they should be washed at least once every sixty days.

It is not a bad plan to alternate dry and wet cleaning. In a typical office or garage building the average janitor can remove the glassware from an overhead fixture, scrub, dry and replace it, in from four to five minutes. Under such circumstances data collected in two large buildings showed that the complete cost of cleaning maintenance per visit varied roughtly from 5 cents to 15 cents.

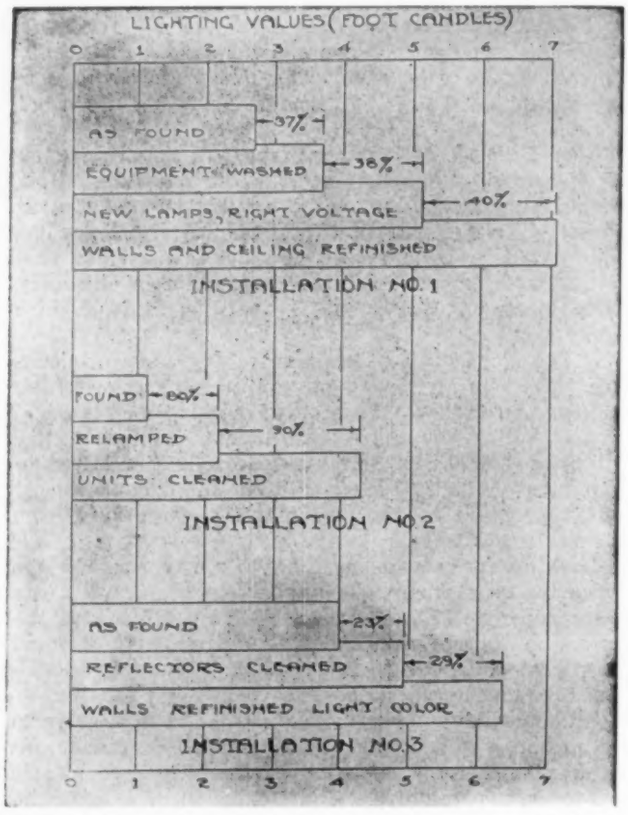
Looking at the problem in another way, consider the office building where the annual electric power costs were some $8,770. The cost of lamp bulbs and the insertion thereof was about $1,035 while the annual total cost of lighting equipment maintenance (including breakage) and supervision was some $4,600.

Stubborn cases of encrusted, greasy dirt require warm water and soap or a mild grease solvent. Extreme cases of hardened sooty deposits, particularly on surfaces outdoors, may require a dilute solution of oxalic acid. After the common washing with soapy water, and to

(*Please turn to page* 26)


LOSS OF LIGHT FROM MAINTENANCE NEGLECT
LOSS DUE TO OPERATION OF LAMPS PAST THEIR PRIME
LOSS DUE TO WRONG COMBINATION OF LAMPS & REFLECTORS
LOSS DUE TO EMPTY SOCKETS & NEGLECTED BURNOUTS
LOSS DUE TO UNDER VOLTAGE OPERATION OF LAMPS
LOSS DUE TO DIRTY WALLS & CEILINGS
USEFUL LIGHT
LOSS DUE TO DIRTY LAMPS & EQUIPMENT

"LIGHT" HOUSE-KEEPING PAYS DIVIDENDS (*Continued*)



Three graphic case-histories, showing how the renovation of lighting facilities, without making any major changes, increased the amount of light quite considerably.

avoid the soap film that will hold the next deposit of dust, wipe and dry the reflector carefully or preferably rinse it in ammonia water.

Cleaning Costs 4% Operating Expense: Cleaning costs vary, but taken alone they seem to average in the neighborhood of 4 per cent of the total operating costs of a lighting installation. If, as seems evident, such cleaning will in itself increase the illumination 20 or 25 per cent, then the results pay for the expenditure four or five times.

The accessibility of the lighting unit (and the lamp) is very important. In commercial installations, if the bulb can be removed without taking down the globe, the maintenance is simplified materially. In industrial installations, the "safe-change hanger" or disconnecting plug facilitates removal of both reflector and lamp to the floor for easy washing. Just what this means in economy is illustrated by the following study.

Hangers Save Money: To clean 5,700 Glassteel lighting units, in their regular overhead position, at eight minutes each, required 45,600 minutes, or 760 hours to clean. (Labor for this operation costs 62 cents per hour). Therefore, the cost of each complete plant wash is 760 x 0.62 = $471.20. Considering four washes per year, the yearly cost = 4 x $471.20 = $1,884.80.

With a cleaning time per unit of two and one-half minutes, made possible by a removable hanger, it takes 14,250 minutes, or 237½ hours to clean the 5700 Glassteels. With labor at 62 cents per hour, the cost for one complete wash is $147.25. The yearly cost or the cost of four complete washes—$589.00. Thus the installation of safe-change hangers effected a saving of $1,295.80 per year, or 68 per cent of the yearly cost of keeping lights clean and efficient.

Wash Dirty Walls: What we have discussed about dirt on the reflector applies in principle to grimy or discolored interior surfaces. Neglecting for a moment the efficiency differences of different colors of painted surfaces, we may consider merely the losses due to neglect thereof. In an enclosed space such as a small room any change in the light reflected by the walls and ceiling will change the light available at work level almost in the same proportion.

Individual studies must be made to ascertain how frequently an interior may be repainted, but it seems common practice to find it economical to wash most painted interiors once annually. How much the reflection coefficient may be increased by washing is impossible to answer definitely but many studies indicate that an increase on the order of 10 per cent is not uncommon.

Use Efficient Lamps: Our third item of neglected maintenance has to do with lamps of poor quality. The cost of the lamp bulb is merely a small "down payment" on the cost of lighting. It usually represents less than 10 per cent of the total, and a few cents difference in the cost of the bulb is really negligible, whereas a few per cent difference in output efficiency is vitally important.

If we evaluate lighting costs properly we find that a deficiency of 6 per cent in the lamp efficiency is about equal to the average first cost of the lamp. Hence inefficient lamps are not cheap at any cost and if the poor lamp is 7 per cent less efficient than a reputable good one, then the purchaser thereof should really be given a bonus to compensate him for his lighting losses.

Inefficient lamps are "wolves in sheep's clothing." They are like a leaky faucet, because the longer they are in operation the more they rob the user. A cardinal rule of good maintenance is to strengthen this link of the economic chain by beginning with a reputable lamp bulb.

Empty Sockets Are Expensive: Empty sockets and unobserved burnouts take their toll of lighting effi-

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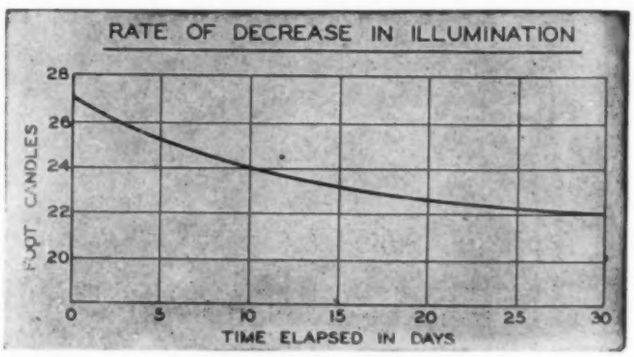
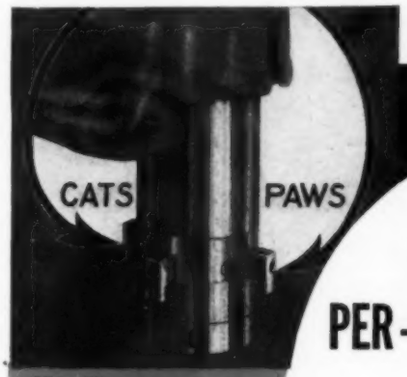
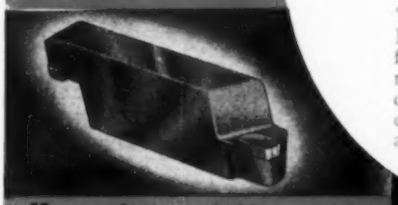


This graph shows what happens if you neglect to clean lamps, reflectors, etc. in your buildings. The rate of decrease in illumination shown is due entirely to dirt.

NEW, FASTER and BETTER

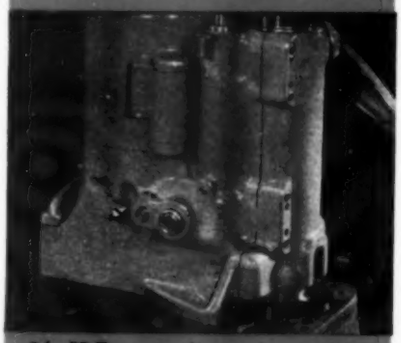


Van Norman catspaws assure accuracy under all conditions.



Heavy duty tool bit standard equipment. Longer life. Better finish.

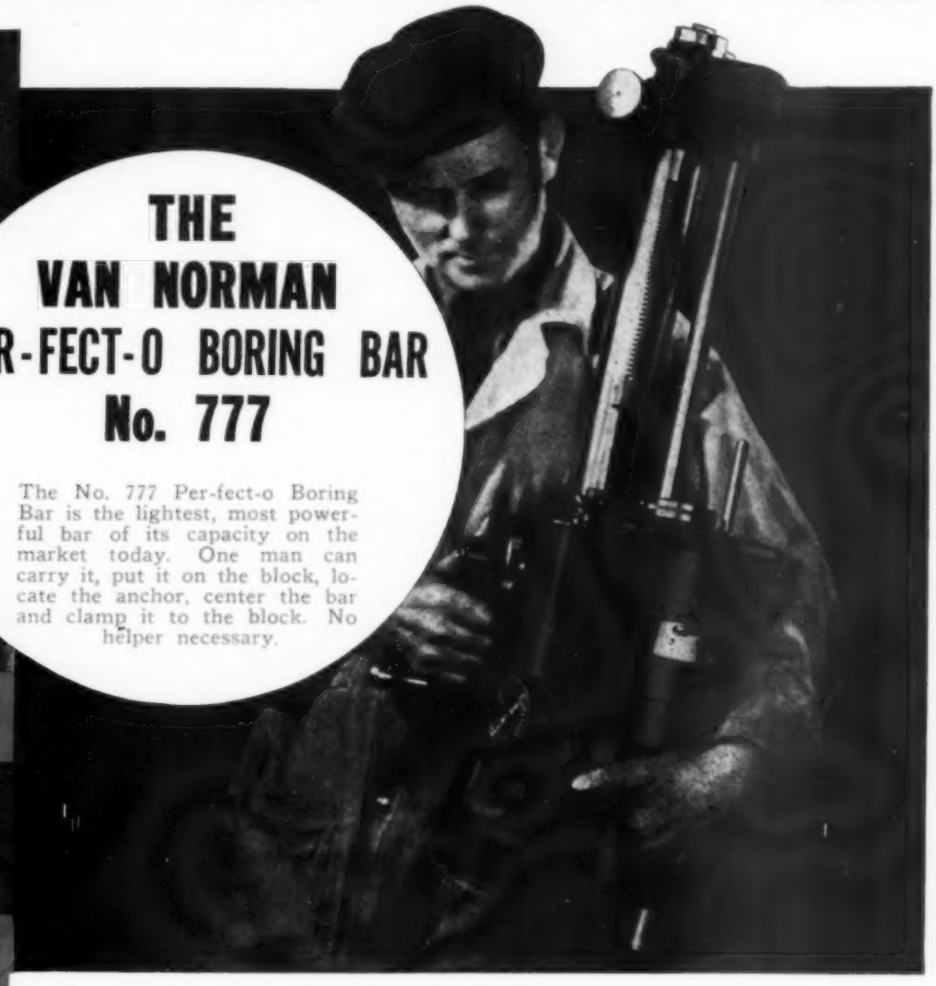
No. 777 Per-fect-o will bore or sleeve any block from a Ford V-60 up to and including 5-11/32".



½ H.P. capacitor type motor. 3400 r.p.m. Most powerful boring bar of its capacity on the market.

Bushings and bearings life-lubricated.

2 feeds and 2 speeds.



THE VAN NORMAN PER-FECT-O BORING BAR No. 777

The No. 777 Per-fect-o Boring Bar is the lightest, most powerful bar of its capacity on the market today. One man can carry it, put it on the block, locate the anchor, center the bar and clamp it to the block. No helper necessary.

NOW . . . for the first time, a heavy duty boring bar that is capable of taking large cuts . . . is fast . . . and light enough for one man to handle.

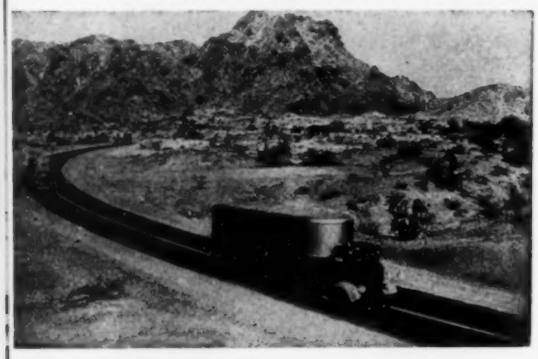
The new No. 777 Van Norman Per-fect-o Boring Bar with ½ H.P. motor will bore or sleeve any block from a 60 H.P. Ford of 2.600" diameter up to and including 5-11/32". Motor is of the capacitor type, does not have high current starting characteristics. Two speeds and two feeds make it possible to take large cuts for sleeves. Heavy duty tool bit is standard equipment, has 3 times more tungsten-carbide than other tools of this type giving 6 times greater life. Bushings and bearings are lubricated for the life of the bar, gears operate in a totally enclosed and sealed bath of lubricant.

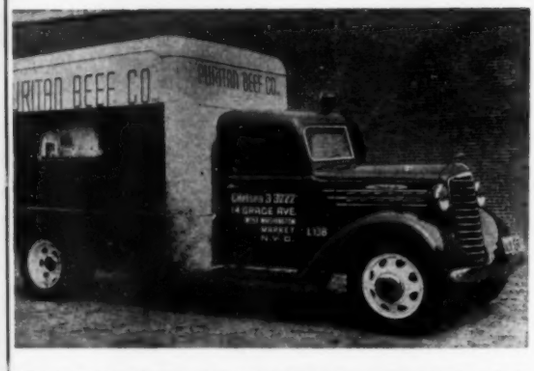
The fastest, most accurate, most easily operated boring bar on the market.

"It pays to 50th Anniversary 1888-1938 *Van Normanize"*

VAN NORMAN

VAN NORMAN MACHINE TOOL CO., SPRINGFIELD, MASS. U. S. A.





PRODUCTION, SALES AND USAGE OF MOTOR TRUCKS REACHES HIGHEST PEAK IN 1937

Registrations Reach New Level; Approximately 4,400,000 Units

MOTOR TRUCKS continue to play a more important part each year in the transportation of agricultural and industrial products essential to every-day life. Reports of truck receipts of milk, fruits and vegetables, and livestock from farms, and other necessities from industrial plants show steady gain in the transportation of these products over the highways. Further manifestation of this is seen in the records set in production, sales and registrations of commercial vehicles.

While the annual factory sales, or production figures, for the year 1936 were second only to those of 1929, reports on factory sales for the first nine months of 1937 indicate that a new high will be set in truck production. Factory sales for the first nine months of 1937 were 764,176 units, or 12.1 per cent ahead of 1929.

Merchandising reports show that total retail sales for the first nine months were at 548,921 units, or 4.8 per cent above the same period of 1936, the previous high. Registrations will reach a new level at approximately 4,400,000 units. Foreign sales for nine months of 1937 totaled 187,668 vehicles, representing a 46 per cent increase over similar period in 1936.

Increased costs of labor and materials have made it necessary during the past year to advance prices. For that reason, the wholesale value of the vehicles produced may be somewhat higher than the 1936 total of $481,961,420. Notwithstanding this advance in the aggregate wholesale value, the average price per vehicle to the consumer is still lower than in 1929, and as indicated in the 1937 edition of "*Motor Truck Facts*," published by the Automobile Manufacturers Association, purchasers can obtain *three* trucks today for the same number of dollars that was required to purchase *one* in 1906.

Employment has continued apace with the increased use of motor truck units. The number engaged in the production, sale and servicing of the vehicles, has multiplied, and new drivers have been added to the point where there are over 3,000,000 chauffeurs operating the 4,023,606 vehicles registered.

Motor truck and bus drivers working for fleet operators have come to be known as the "gentlemen of the road." The skill with which they handle their vehicles, and the courtesy which they accord other highway users reflect the driver-training programs of the individual fleet operators and associations that have taken the lead in this activity.

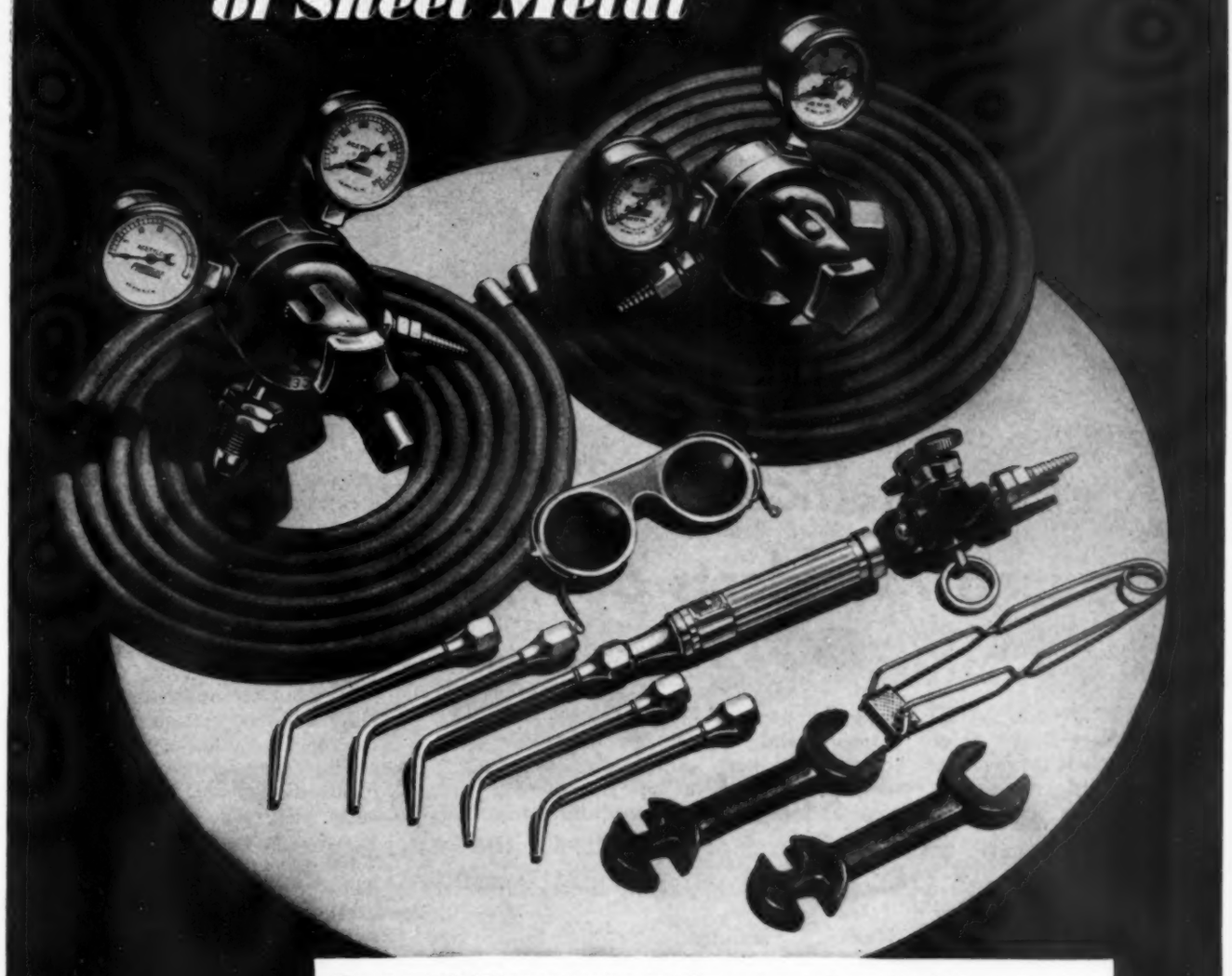
Programs are now being devised as a means of interesting owners of one or two trucks in driver training and maintenance campaigns. This step assures increases in motor truck safety and more favorable public regard for motor truck transportation.

Leaders in the trucking industry are aware that much unreasonable legislation applying to motor trucks will be rescinded as the public continues to recognize the indispensability of this transportation agency, and as those concerned with motor truck operation continue, by cooperative efforts with enforcement officials, to eliminate the rough-neck driver and the improperly maintained vehicle.

Motor truck safety was further enhanced during 1937 with the adoption, either in whole or in part, of Safety Regulations prescribed by the Bureau of Motor

(*Please turn to page* 71)

For Production Welding
of Sheet Metal



PREST-O-WELD W-106B Oxy-Acetylene Welding Outfit

Complete, as illustrated . . . . . $53.00†

● Ask your jobber to show you why this Prest-O-Weld* specialty welding outfit is suited for profitable fabrication of sheet metal products. Notice the small, easily manipulated blowpipe—also the time-saving Prest-O-Weld Detachable Valve Body, which permits changing from welding to cutting in 10 seconds.

The CW-105 Cutting Attachment ($21.00† additional) adapts the welding blowpipe for cutting purposes.

THE LINDE AIR PRODUCTS COMPANY

Unit of Union Carbide and Carbon Corporation

UCC

NEW YORK AND PRINCIPAL CITIES

PREST-O-WELD

WELDING AND CUTTING APPARATUS

*Trade-Mark

†Prices slightly higher west of the Rocky Mts.

PRODUCTS OF A UNIT OF UCC UNION CARBIDE AND CARBON CORPORATION

This "Traffic Court" Reduced Accidents 66⅔%

•

CONSOLIDATED Edison Company of New York, by intelligent safety planning and through an intensive accident-prevention campaign, has consistently bettered its safety record in the face of increasing traffic congestion. . . . Here's how they did it:

A GROUP of solid business men sat intently over a table strewn with children's toys. It was a miniature street-scene, with tiny tin trucks, cars and buses. A row of diminutive paper houses looked down upon the street. An iron horse two inches long drew a dwarfed milk wagon. The traffic standard was match-sized. Half way across a traffic-lane stood a wooden man. One after another, the business men swerved the little red truck around the wooden figure into the side of a toy auto headed in the opposite direction. They were taking the game very seriously.

It was a meeting of the "traffic court" of Consolidated Edison Company of New York, held monthly at the 41st Street Service Building and the 111th Street Building. Brooklyn Edison's traffic court, under the direction of W. G. Chandler, superintendent of transportation, meets at the Red Hook Service Station. These groups are responsible in no small degree for Edison System's remarkable safety record.

Accidents for which Edison System drivers were held responsible, fell from three-fifths of an accident for each 10,000 miles of travel in 1927 to one-fifth of an accident for the same mileage in 1936. (A two-third's reduction in any man's language.)

The System's fleet of 1,500 trucks and passenger-cars, manned by more than four thousand drivers, operates in the most congested traffic area in the world. They travel in all sorts of weather, day and night, in the interests of maintaining electric, gas and steam service.

How has this large fleet of cars consistently bettered its safety record in the face of increasing traffic congestion? Ask Col. John Stilwell, vice-president of Consolidated Edison and president of the Greater New York Safety Council, under whom safety matters in the Edison System function.

In 1925 Consolidated Edison started an intensive accident-prevention campaign. In 1931 it expanded this safety work by setting up an automobile accident educational program. That program, under the supervision of E. P. Durfee, assistant manager, Insurance Department, is directed by William F. Brown, automotive safety engineer. Through it a never-ending war on accidents has been waged with a year-round education program, courts of inquiry, searching investigation of every accident, observation of vehicles in operation and careful inspection of cars and trucks.

Two lecturers, who are expert drivers, spend their entire time conducting safety classes. The drivers must attend two such lectures a year in classes of twenty or thirty each. Courses now under way emphasize *intersection* accidents, because an analysis of previous years' experience reveals that half of the accidents involving company cars in motion happened at intersections. Other lectures give specific instructions in the fundamentals of good driving. Students learn the principles behind starting and stopping a motor vehicle. They are tested for reaction time. They study the angles of vision and are taught how to judge time and distance properly.

They learn what to do when the vehicle is out of control and how to avoid the six different types of skidding. Copies of traffic regulations or digests of them are in the hands of every Company driver.

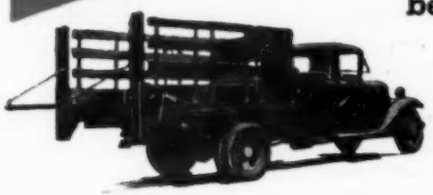
Thousands of safety posters and bulletins are distributed to the twenty-eight garages of the System each year. That means daily safety reminders to all drivers. Besides that, charts showing accidents by departments and months are placed in prominent positions to stimulate safety competition between departments.

The little "traffic court," which Consolidated Edison calls the "court of inquiry," was the brain-child of J. R. Coxe, general superintendent of transportation. Drivers involved in accidents of any consequence come before the Auto Accidents Investigation Committee, composed of the safety engineer, a representa-

(*Please turn to page* 72)

6 to 1

"This unit doing the work of the entire six," says a Nationally Known Food Distributor, "By the use of this one unit we have been able to eliminate six 5 ton - - - - Trucks."



Results from one of the original type Tail Gates . . . Since then improvements have been made.

LA-TRO POWER ELEVATOR TAIL GATES

Keep your trucks rolling . . . Save many hours now wasted time loading and unloading . . . Safety and Speed . . . End costly Material Handling accidents to both Men and Merchandise . . . Economies quickly pay for a LA-TRO Power Elevator Tail Gate.

1. Tail Gate becomes a powerful freight elevator, lowering to the street, platform or sidewalk, smoothly, quietly, safely.
2. Power from the truck motor raises or lowers the Tail Gate.
3. Always ready to unload or load the heaviest units quickly and safely.
4. Makes Material Handling a one-man job, with exact elevator control.
5. Mechanically simple and fool-proof, no pipe lines, no fluids, no valves.
6. Other unloading appliances, such as skids, no longer are needed.
7. While traveling, acts as a standard gate, holding the load safely in the truck.
8. Can be quickly installed on your present chassis, or built into the frame of a new truck or van or trailer.

Let us demonstrate its economies to you.

LANG INDUSTRIES, INC.

90 WEST STREET NEW YORK CITY

Let's Think About

HEADLIGHTS

THOUSANDS of candlepower of illumination are still being thrown away by indifference to Headlight Maintenance, which is capable of providing 50,000 units of light per vehicle, if given a minimum of attention based on knowledge of lamp arrangement. . . . This article tells how.—Editor.

ONE would think that a driver, driving along a highway at night with 50,000 candles of light guiding him through the darkness would be immediately conscious if 15,000 candles were suddenly snuffed out. Or 10,000 or even 5,000 of them. But, somehow or other, he does not seem to be; perhaps, because the reduction of light is less sudden on the average than the snuffing out would imply.

The fact remains, however, that in the case of the average vehicle of recent year, there are 50,000 candles of light at the disposal of the driver if the headlamp equipment is kept in good condition. That is a great deal of light, but it also involves a very large "if". 50,000 c.p. is actually possible.

Like so many prodigal sons come into a sudden and considerable heritage —the result of assiduous effort on the part of headlighting engineers—some fleet operators have made it a practice to throw away much of the substance of their gifts. They apparently have assumed that with 50,000 candles of light at their disposal, they have had light to waste. Conservation has not been a part of their philosophy. Because of their profligacy and waste, the efforts of the engineer to solve the motor headlight problem have been largely wasted in turn.

The fleet operator buying a new vehicle gets 50,000 candlepower of light for little or nothing. But he cannot keep it on the same basis, and if he thinks otherwise he is cheating himself. And cheating himself dangerously, for 50,000 candlepower is what he needs *all the time* for safe driving under the variety of conditions of current motor vehicle operation.

Headlights have been increased in their ability to endure the rigors of service as well as in power, but they still require periodic maintenance attention.

That this is the case should be obvious from even a fragmentary knowledge of the various units of which they are composed. Essentially the lamp is an arrangement of wiring, bulb, reflector and lens. There was a time when all of these items were subject to disorders, but the work of engineers in recent years has eliminated most of those affecting wiring. Connections are of the type that remain fast, are protected from the weather and the erstwhile tendency to corrode, short-circuit and otherwise betray the driver.

The other items, however, still are subject to a variety of disorders.

Bulbs, whether they be of the two-filament or three-filament type, not only will burn out but will diminish in power output, which bears more or less constant watching on the part of the fleet operator. The bulb is the basis of headlight power. That it can be made to give a total of 50,000 candlepower, in astonishing contrast to its essential 32 candles of power, is due to the magnifying capacity of the reflector, of course, but the reflector must have the full power of the light to magnify or there will be no such force of light available. The situation calls for the periodic checking of bulb strength instead of the usual practice of waiting until the bulb has burned out completely. Most fleet operators wait for the latter and then many of their drivers are not aware of it until their attention is called to it.

Some fleet operators, it would seem, have been misled by the knowledge that headlight bulbs in today's vehicles are of the fixed-focus type. That does not mean, as many operators assume, that lights never need adjustment. Even a fixed-focus bulb can get so far out of correct aim that it may look like a searchlight combing the skies for enemy airplanes in time of war. This fact would be obvious to any driver who would but take the trouble to notice the pattern of light ahead of his vehicle. Every six months is not too often to have the light adjustment checked, even when it seems to be all right.

Light checking equipment in the up-to-date service establishment includes not only the wall chart layout with which every fleet man is familiar, but also gauges for measuring the amount of light available. It means that there is nothing the fleet operator cannot know about his vehicles' lights if he will but take the

(*Please turn to page* 73)

"SPINNING POWER" from COAST to COAST

Seattle, Wash.: Diesel-powered Truck of the Garrett Transfer & Storage Co., equipped with Globe Heavy Duty Batteries, for more *"battery kick,"* they say.

Chicago, Ill.: Fleet of Midwest Motor Service Co., equipped with Globe Heavy Duty Batteries. *"Truly remarkable service,"* they write.

Roxbury, Mass.: Fleet of the H. B. Church Truck Service Co., equipped with Globe Heavy Duty Batteries and "Full-Spark" Plugs — *"for dependable, low cost operation."*

Globe Heavy Duty Batteries and "Full-Spark" Plugs are a tested and proved combination for reducing operating costs . . . for dependable service.

Cut 1938 Operating Costs

RESOLVE now to cut 1938 operating costs by installing Globe Heavy Duty Batteries. This is the time of the year to check your operating practice. Testimony from fleet owners the nation over reveals Globe "Spinning Power" is quicker starting power — longer-lived — more dependable. Reduce your maintenance costs in 1938. Mail coupon now. Join the big Globe Coast-to-Coast hook-up.

GLOBE-UNION INC., Milwaukee, Wisconsin

8 Factories — 4 Branches to Serve you

"SPINNING POWER IS STARTING POWER"

GLOBE BATTERIES

AUTOMOTIVE - HEAVY DUTY - RADIO - POWER & LIGHT

GLOBE-UNION INC., Milwaukee, Wisconsin

☐ Please send Service Manual and full information on Globe Heavy Duty Batteries.
☐ Send details about "Full-Spark" Plugs.

Name.....

Firm.....

Address.....

City and State..... FO-12

The CASE for GOVERNORS

•

IN WHICH C. B. Seymour, (Member, S.A.E.), automotive engineer for a prominent governor manufacturer, very definitely "states the case" and gives you the results of some interesting laboratory tests which he has conducted, in the matter of "Governors Vs. Throttle-Stops". . . . This looks like interesting and "meaty" information.—Editor.

A RECENT survey made by this publication indicated a great preference on the part of fleet operators for the use of speed governors on their automotive equipment. This survey (as you no doubt are aware) was quite complete and indicated certain preference for certain makes and types of governors. The survey also showed that fleet operators were enjoying many very material savings in operation and maintenance costs by using governors on their automotive vehicles.

Of the 180 fleet operators who participated in this survey, 83 fleets were 100% governor-equipped and 64 fleets were partially governor-equipped. Only one operator reported that he was using throttle-stops and no operators reported using restriction-plates. In order to clear up certain misunderstandings regarding the actual accomplishments of the latter devices, and to explain how they differ from the speed governor (of which there are several makes on the market) this explanatory article is offered.

The throttle-stop, as its name implies, is a device (that can be made in various forms) which limits the carburetor throttle valve's full open movement to a predetermined setting. This can be accomplished by placing the stop at the throttle lever itself, or by placing a block under the accelerator pedal.

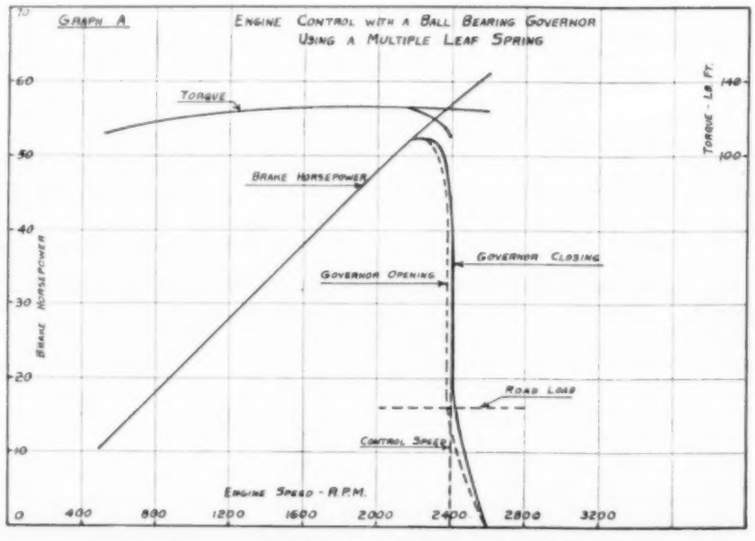
The restriction-plate device consists of a metal plate, not unlike a gasket, usually installed with a $\frac{3}{8}$" to $\frac{7}{16}$" hole, between the carburetor and the intake manifold. The size of the hole through which the air - fuel mixture passes is generally determined by the speed to which it is desired to limit the vehicle on a level road, in high gear.

Because of the fact that many fleet operators are inclined to confuse throttle - stops and restriction - plates with governors, it may be pertinent to review here three laboratory tests recently made by the writer on this subject.

These tests were made on a General Electric Model TLC electric engine dynamometer, using a Ford V-8, 85 H.P. engine, equipped, respectively, with (a) a popular ball-bearing governor using a multiple-leaf spring; (b) a throttle or restriction-plate; (c) a throttle-stop. The purpose of the tests was to show a comparison between an efficient governor and the other types of speed controlling devices—namely the restriction-plate and the throttle-stop. Three graphs were plotted to illustrate the results of these tests; they are shown in conjunction with this article.

Graph A was made while the engine was equipped with the ball-bearing governor using a multiple-leaf spring. It will be observed that with 16 H.P. "road load," 2,400 engine r.p.m. is equivalent to 55 m.p.h. car speed, using 3.54 rear axle gear-ratio. (With 4.11 gear-ratio, car speed at 2,400 r.p.m. would be 47½ m.p.h.; with 5.14 gear-ratio, it would be 43 m.p.h; with 6.60 gear-ratio, it would be 34 m.p.h).

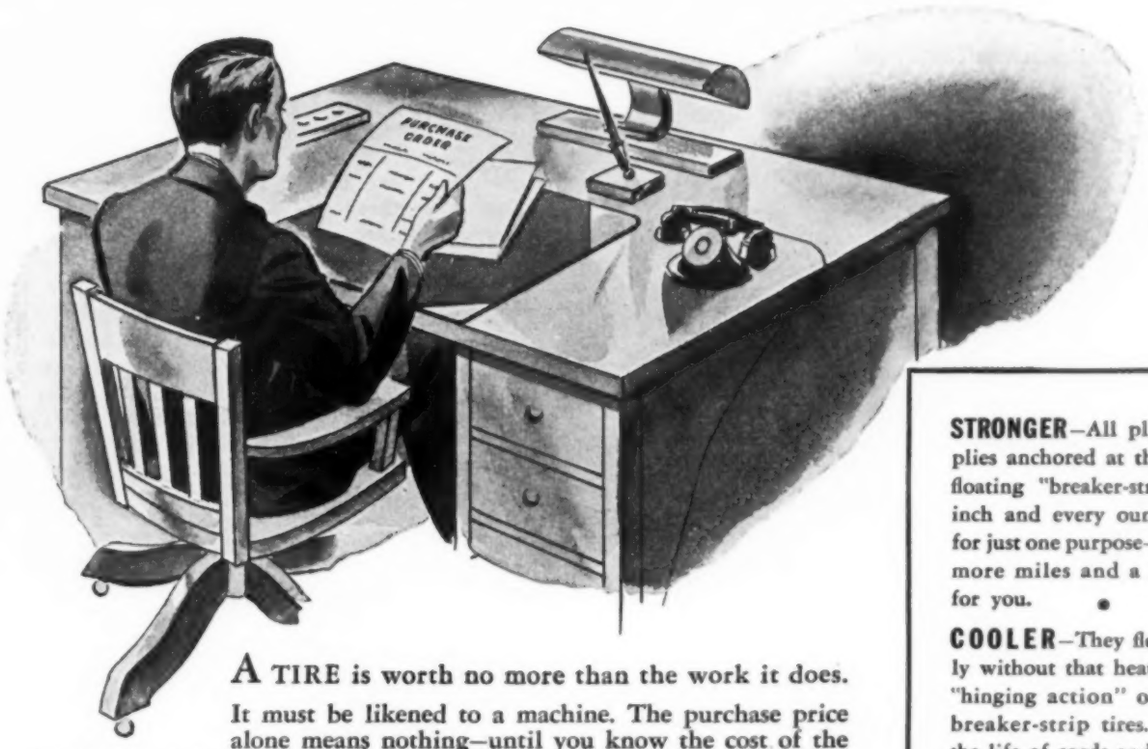
It will also be observed, when referring to Graph A, that the engine r.p.m., no load, wide-open throttle, at the curb, would not exceed 2,600 r.p.m. Cheating was not possible and governed speed could not be exceeded, under any circumstances. It will also be noted that the torque remained unaffected up to the controlled r.p.m., with a loss of only 4 h.p. at actual cut-off speed and no horsepower loss up to 2,000 r.p.m.



The road speed in the above test was set at 2,400 r.p.m., which, as before stated, gave a maximum speed of 55 m.p.h. using a 3.54 gear-ratio in the rear axle. The use of the governor provided this speed limita-

(*Please turn to page* 36)

QUESTION: *What is a tire worth?*



A TIRE is worth no more than the work it does.

It must be likened to a machine. The purchase price alone means nothing—until you know the cost of the work per unit it turns out.

You can't know the real cost of a tire until you know how far it has gone and how many tons or packages it has carried. You must divide purchase price by mileage and payload.

That's why General Truck Tires have always been built stronger—to deliver greater mileage and haul more payload. It costs more to build a General Tire because of the way it is built. Thousands of truck operators know it costs less to use Generals because of the way they perform.

Your local General Tire dealer is ready to offer you the benefit of his factory-training and practical truck tire knowledge. He may be able to reduce your tire costs materially.

THE GENERAL TIRE & RUBBER COMPANY · AKRON, OHIO
In Canada—The General Tire and Rubber Company of Canada, Ltd., Toronto, Ontario

STRONGER—All plies are *full* plies anchored at the bead—no floating "breaker-strips"—every inch and every ounce is there for just one purpose—to produce more miles and a lower cost for you.

•

COOLER—They flex uniformly without that heat-producing "hinging action" of ordinary breaker-strip tires. Heat kills the life of cords and cuts down the miles in a tire. Generals are *cool*—that's why they run more miles at a lower cost for you.

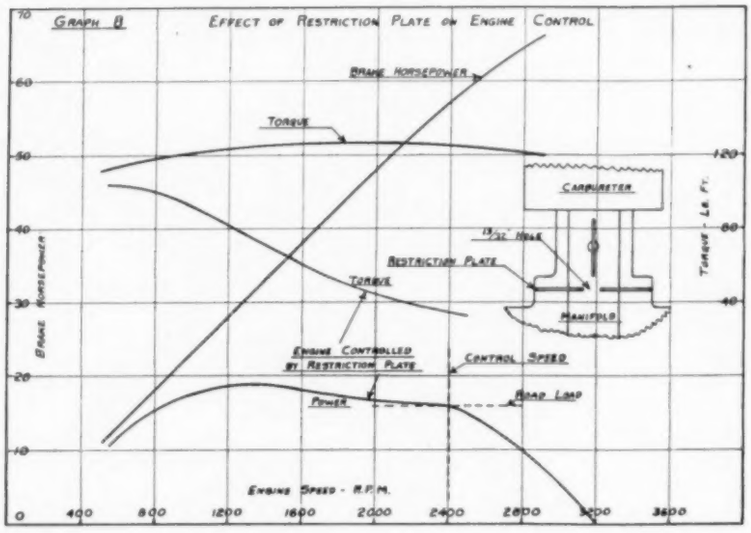
•

"COMPACT RUBBER" TREADS—All tires stretch due to fatigue in the fabric, but Generals, having no idle, half-way plies, stretch least of all. The tread is kept compact and compressed against the road—that's why it produces more miles and reduces your cost.

THE TRACTION TREAD | THE HIGHWAY | THE COMMERCIAL DELIVERY | THE CLEATED TRACTOR | THE JUMBO | THE ALL-GRIP

One of the most complete lines in the business—each tire built to give you more miles for less money

GENERAL TRUCK TIRES



tion *without* affecting horsepower and torque up to the prescribed r.p.m. and from this it is obvious that the vehicle could meet road conditions under varying loads, from no load to full load, with only the normal governor variation in engine r.p.m.

Graph B was made as a result of tests on the same engine and dynamometer, using a restriction-plate placed between the carburetor and intake manifold. The restriction-plate used had two $\frac{13}{32}$" holes, one for each opening in the dual manifold. The same conditions as to car speeds at 2,400 r.p.m. apply to this graph as well as to the previous one. It will be observed that the engine, at no load, wide-open throttle, at the curb, could reach a speed as high as 3,200 r.p.m., and that, going down-hill, for instance, where there would be no road load, the engine r.p.m. could increase so greatly as to exceed the maximum peak r.p.m. of the engine.

The horsepower loss at control speed was about 41 H.P., or about 72 per cent, with a corresponding drop in torque. It should also be noted that at no time did the power-curve meet the power-curve of the ungoverned engine, when this restriction-plate was used.

Using a throttle-stop that allowed 24 degrees opening and making similar dynamometer tests, produced the results shown in Graph C. It will be noted, upon referring to Graph C, that nearly the identical power-curve was obtained as in Graph B. The same conditions as to car speeds at 2,400 r.p.m. apply to this graph, as well as the previous graphs.

It will be observed, in Graph C, that the engine, at no load, wide-open throttle, at the curb, could reach a speed of 3,150 r.p.m. The horsepower loss at control speed was also 41 H.P., or about 72 per cent, with a corresponding drop in torque. It should also be noted that at no time did the power-curve, (with the throttle-stop) meet the power-curve of the ungoverned engine.

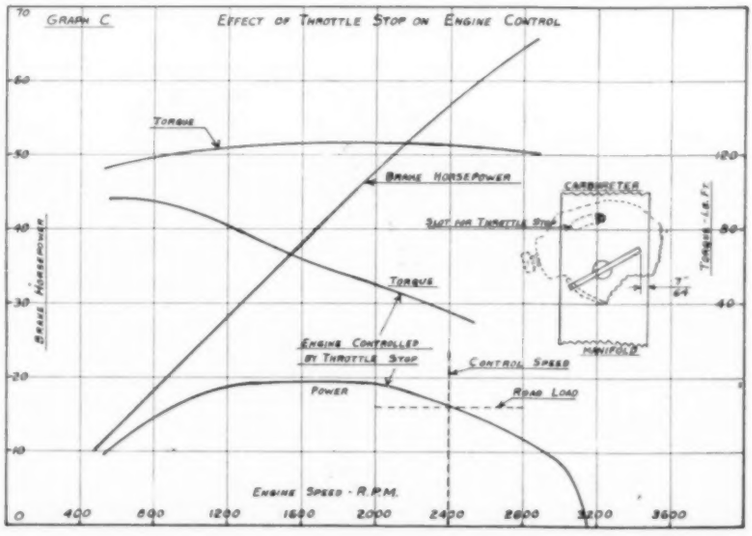
After studying the three graphs just referred to, it is quite apparent that speed-restricting devices (other than properly-designed governors) even under the most favorable circumstances (such as with light passenger-car vehicles) will rob the engine of much acceleration ability and will result in unfavorable road speeds under favorable road and load conditions. Not only are such devices costly in fleet operation, therefore, from the standpoint of operation and maintenance, but also from the standpoint of general safety.

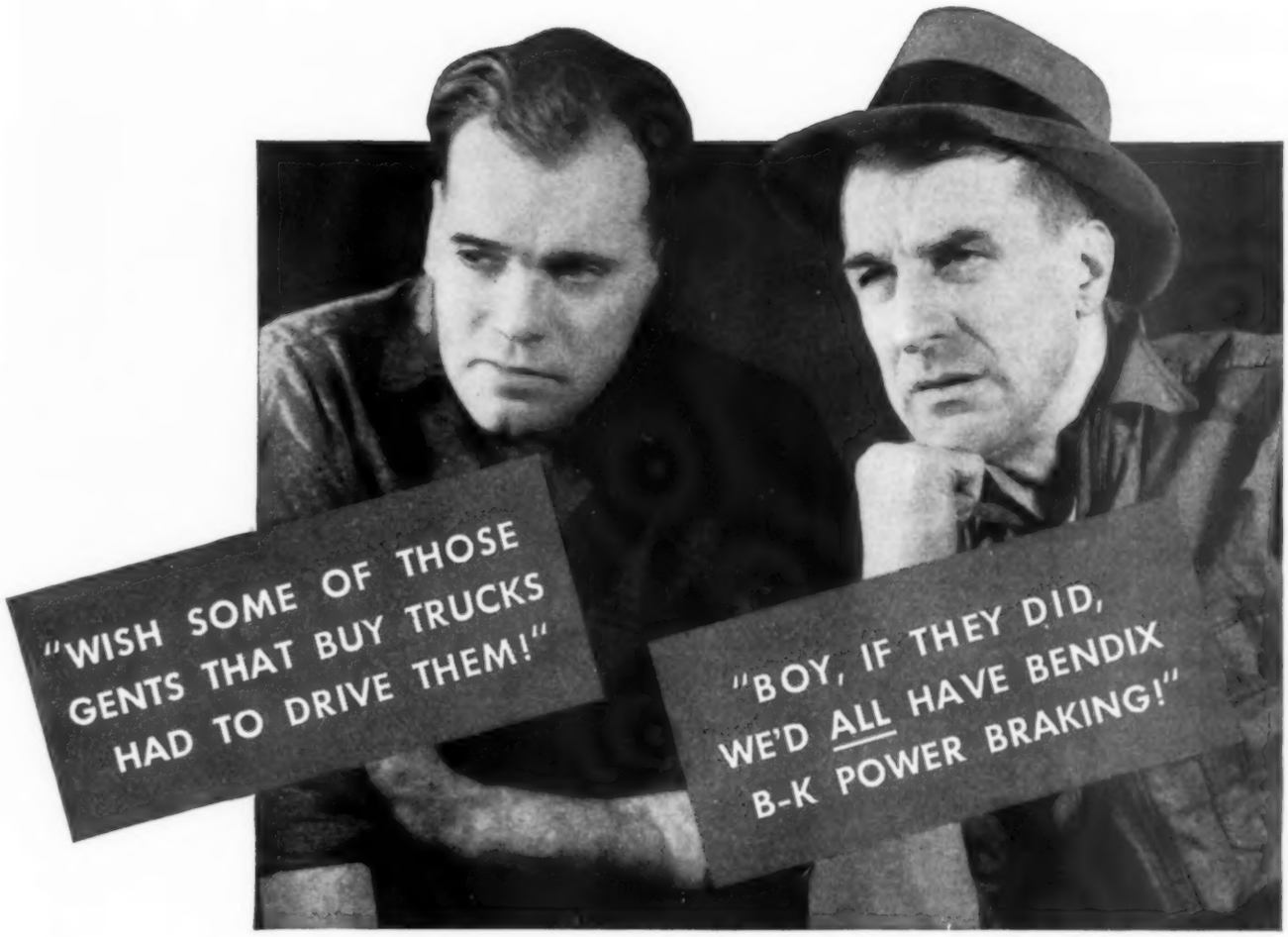
Let us analyze a bit further the actual conditions brought about by the use of throttle-stops and/or restriction-plates. It can be readily seen that by limiting the opening of the carburetor valve (by using a throttle-stop) a high vacuum will prevail below the throttle-valve or butterfly. Where a restriction-plate is used, the same high vacuum will prevail below the plate itself. This high vacuum, naturally, is not conducive to fuel economy.

In the case of a manually-controlled carburetor metering-valve used on a number of cars and trucks as standard equipment, it will be seen that where a restriction-plate is used, an over-rich mixture will be obtained by pressing the throttle beyond the controlled speed. In the case of vacuum-controlled metering-valves, where a restriction-plate is used, the restriction-plate, being *below* the carburetor, creates a high vacuum below the plate, when the carburetor valve is opened beyond the capacity of the restriction-plate, allowing an excessive flow of fuel, because the high vacuum below the restriction-plate cannot operate the vacuum fuel metering-valve in the carburetor.

In each of the above cases this condition prevails with the use of restriction-plates. In the case of the throttle-stops, although the proper mixture is obtained, the drivers of vehicles so equipped are often obliged to use first and second gear over the long period required for acceleration, and to use first and

(*Please turn to page* 70)





The *HIGH-UPS* don't always get the *LOW-DOWN!*

Small economies in truck fleet operation are sometimes mighty misleading. It's all well and good to save on original equipment cost when you're sure the "saving" won't go dwindling away in the form of service troubles, inefficiencies and shortened truck life.

Bendix B-K, the choice of nearly all (better than nine out of ten) users of power braking, actually does, in some instances, cost a little more than certain other auxiliary stopping equipment. It *has* to. It costs more to make.

Bendix believes—and sales prove the soundness of the conviction—that B-K engineering principles, B-K design and B-K precision manufacture are preferred by experienced truck operators.

Bendix B-K *alone* gives you *all* that Power Braking has to offer. And the name and reputation *alone* of Bendix, world's largest automotive brake manufacturer, are ample reasons for specifying and insisting upon Bendix B-K Controlled Vacuum Power Braking on the trucks you've got now and the trucks you'll buy in the future.

Most truck manufacturers offer B-K as standard equipment. They can be had on *any* truck.

WHY MOST POWER BRAKES ARE BENDIX

- ★ Least Weight Added
- ★ Fewest Added Parts
- ★ Low First Cost
- ★ Practically No Maintenance
- ★ Instant Remote Control
- ★ All Emergency Features of Train Operation
- ★ Quickly Installed
- ★ Original Brake System Left Intact
- ★ Fully Controlled Power Application
- ★ A Nation-Wide Exchange Plan
- ★ A Nation-Wide Service Organization
- ★ Years of Power Braking Experience and Unapproached Protection Over Future Years of Service

BENDIX PRODUCTS CORPORATION

(Subsidiary of Bendix Aviation Corporation)

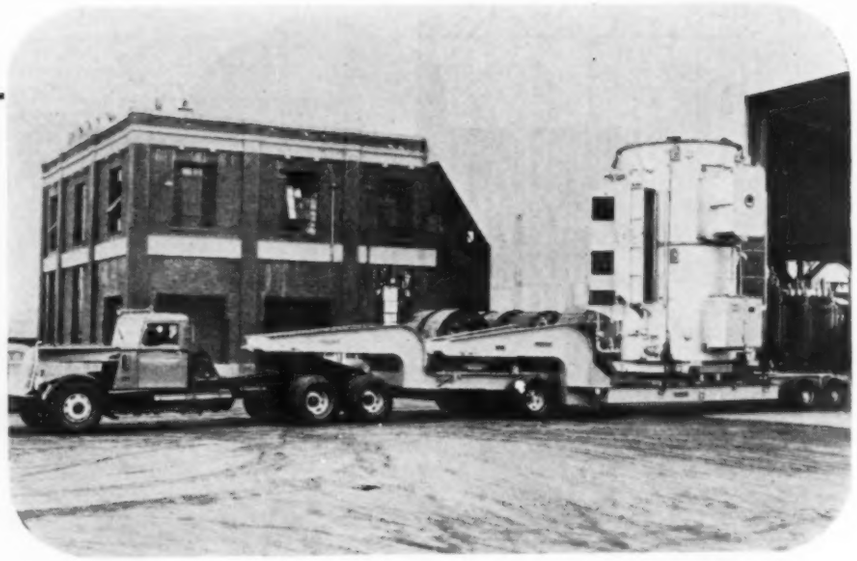
401 Bendix Drive South Bend, Indiana

BENDIX

B-K POWER BRAKING A BENDIX PRODUCT

Controlled Vacuum

POWER BRAKING



Huge Trailer Totes 101 Tons *with* Ease

PEAK capacity cannot be determined, the owner-operator says, except by the limitations of the motive power. . . . In this case the power unit is a Diesel engine, having 6-cylinders and developing 150 h.p. . . . The construction details of this unit are given herewith.

WHAT is said to be the world's largest trailer, from the standpoint of capacity, was recently delivered by the Fruehauf Trailer Company of California to the Belyea Truck Company of Los Angeles, California, a firm which specializes in heavy-duty hauling of all kinds.

This is a *real* trailer. Fruehauf rates it as a 100-ton unit, but what its true capacity may be has not yet been determined. Belyea says 100 tons is "about right," but those who know Belyea say the actual capacity never will be known until a load is piled on it so heavy that no power can start the wheels turning—and that would be more a test of pulling-power than the carrying ability of the trailer. Already it has transported one load of 101 tons.

The trailer is so big and of such massive construction and capable of handling such tremendous loads that a "dolly" weighing 15,000 pounds is required to support the front end of the trailer.

What? A "dolly" at the front of a trailer? In this case, yes. Without the "dolly" it is a semi-trailer. The "dolly" makes it a four-wheel trailer, or a full-trailer; some people even call it the "wagon-type" trailer.

The trailer is of the low-bed variety, the load deck height being only 30 inches. As this would not clear the wheels, there is a rear deck 36 inches high. The load may be distributed over both decks or concentrated upon one, as desired.

Dimensions and other important details of this unusual heavy-duty unit are as shown in the accompanying box, and as follows: Flat load length—18 feet; total load length—27 feet; overall length—39 feet, 3 inches; width—11 feet, 3 inches; trailer weight — 33,360 pounds; dolly weight — 15,000 pounds; truck weight — 20,000 pounds; rated capacity—100 tons; rated capacity, without dolly—50 tons.

About the first load to be hauled on this new Belyea trailer was an electric transformer weighing 82 tons. This was an "experiment" and it worked so well that the transformer's "daddy", weighing 101 tons, was next. The transformers were hauled for the Los Angeles Bureau of Power and Light and the distance in each case was about six miles.

On the second job, the gross weights were as follows: Transformer—202,000 pounds; trailer—33,360 pounds; dolly — 15,000 pounds; truck—20,000 pounds. The total gross vehicle weight, including load, was, therefore, 270,360 pounds.

There was nothing very special about the construction material of this unusual trailer unit, we are told. King-pins, fifth-wheels and locking-jaws are standard Fruehauf units—the very same as are used in regular semi-trailer construction.

The king-pins and axles are made of chrome-molybdenum, S.A.E. No. 4140 steel, heat-treated and with 300 Brinnel hardness.

The entire train is equipped with tires of the same (a popular) make. Thirty-four of them are used. There are 16 on the rear trailer axles, 8 on the dolly axles and 10 on the tractor-truck which does the hauling.

The tractor itself is an especially built one, designed by Belyea engineers. It is powered with a Cum-

(*Please turn to page* 68)

DIMENSIONS of the UNIT:

Flat Load Length	18 feet
Total Load Length	27 feet
Overall Length	39 feet, 3 inches
Width	11 feet, 3 inches
Trailer Weight	33,360 pounds
Dolly Weight	15,000 pounds
Truck Weight	20,000 pounds
Rated Capacity	100 tons
Without Dolly	50 tons

MODERN TRUCKING DEMANDS THIS MODERN PROTECTION

The New N-Type Purolator

The high speeds, heavy loads and steady hauling required of modern truck engines have made the proper protection of engine oil an all important factor in saving wear, parts replacement costs... and in determining the length of time between overhauls.

The new N-TYPE PUROLATOR has been specifically designed to give this protection with new effectiveness and new element replacement economy. Its great dirt-absorbing capacity, properly determined flow rate and long element life keep oil clear, clean and effective longer ...under the most exacting operating conditions.

A comparison of maintenance costs... with and without PUROLATOR protection ...will convince you of its greater savings. Motor Improvements Inc., Newark, New Jersey, makers of

N-17 is for engines of 7 to 10 quart crankcase capacity.

N-16, identical to **N-17** except in size, is designed for engines of less than 7 quart capacity.

The filter element in its metal container can be lifted and replaced without use of tools. This replacement element can be readily adapted to a majority of filter cases now in use.

PUROLATOR

The Oil Filter

• NEWS of the TRUCK INDUSTRY •

Newark Truck Show Successful

THE FOURTH Annual National Motor Truck Show, held in Newark, N. J. last month was a success from the standpoint of attendance and sales. . . . Over 40,000 interested people attended and total sales, traceable to show efforts, amounted to well over $2,000,000. About 150 trucks, trailers and other units were shown, in addition to many items of special equipment, supplies and replacements. . . . Next year's Truck Show (the fifth) will be held in Commerce Hall, Port of New York Authority Building, New York, N. Y. . . . The dates are November 9 to 16, 1938.

•

Watson Named Director of Truck Sales

STUDEBAKER announces the appointment of C. F. Watson as director of sales, Truck Division. . . . Mr. Watson succeeds C. H. Wondries, who has been promoted to the position of director of national accounts. . . . Mr. Watson joined Studebaker early in 1936 as a special representative. He has had many years of experience in the truck field, and has been district representative, branch manager and divisional manager of other well known truck makers. . . . Our best to you, Mr. Watson!

•

Schaefer Joins Federal Truck

APPOINTMENT of K. M. Schaefer as assistant to the general manager, assigned to sales, of Federal Motor Truck Company, has recently been announced. . . . Mr. Schaefer will collaborate with R. W. Ruddon, vice president and general manager, in planning a sales program for Federal. . . . His experience in the automotive industry dates back to 1922.

•

Hudson to Announce Business Cars

HUDSON Motor Car Company, Detroit, will shortly announce a line of seven types of business cars, all mounted on the 6-cylinder Terraplane chassis, available in 117 and 124-inch wheelbases. The 96 horsepower engine will be standard, with 102 horsepower available as optional equipment.

Campbell Directs Marmon-Herrington Sales

MARMON-HERRINGTON announces the appointment of C. Alfred Campbell, nationally-known automotive sales, advertising and sales-promotion engineer, to the position of general sales director. . . . Mr. Campbell, a resident of Indianapolis, has had an extensive business experience, having been associated with several leading companies in the automotive industry, specializing in commercial and industrial transportation units.

•

"Trailabout" New in GMC Truck Line

FOR 1938 General Motors Truck Division is featuring its new "Trailabout", illustrated here. . . . This is a 2-wheel commercial trailer of 1,000 pounds capacity; it can be "hitched" to passenger-cars or trucks. . . . Two

body lengths and four body arrangements are offered, the standard pick-up body forming the base for the three other body styles, carrying side screens, full screens or stake rack. Body lengths are 77 and 91 inches. . . . Features are 6-inch tires, skirted fenders, license bracket and tail-lamp, a special ball-and-socket hitch unit. . . . General Motors Truck Division, Pontiac, Mich., will be glad to send full details; promptly if you mention FLEET OWNER.

•

Jenkins Manages Charlotte Branch

AUTOCAR announces the appointment of J. H. Jenkins as manager of their Charlotte, N. C. factory branch, following the death of G. A. McLaury. . . . Mr. Jenkins has been identified with the motor truck industry in North Carolina for fifteen years, having recently been a salesman for Autocar in eastern North Carolina.

International Sees Sales Gains Ahead

THE YEAR 1937 has proved the most notable in the history of International motor trucks, recording new high marks in sales, engineering and expansion, according to P. V. Moulder, manager, motor truck sales, International Harvester Company. . . . Establishing good gains month by month through the year, over the corresponding months of 1936, International registrations increased during the first eight months from 48,147 units in 1936 to 53,657 trucks for the same period in 1937. . . . The Company expresses the belief that these sales gains are to continue during 1938.

•

Wondries Heads National Accounts

STUDEBAKER announces the appointment of C. H. Wondries as director of their national accounts division, a new department in the Studebaker sales organization, to aid distributors and dealers in handling passenger-car and truck business with national organizations and large fleet operators. . . . Mr. Wondries joined Studebaker in 1925, and, having rounded out his merchandising experience, is well equipped to take on his new duties. . . . Geo. D. Keller, vice president in charge of sales, made the announcement recently.

•

Two New Buildings for Fruehauf Plant

FRUEHAUF Trailer Company, Detroit, Mich., announces the construction of two new buildings designed as important additions to its main plant in Detroit. . . . One of these, a brick-and-steel structure, 487 feet wide by 120 feet deep, provides Fruehauf with a new, spacious paint shop of the most modern automotive type. . . . The second building adds over 11,000 sq. ft. to Fruehauf's shipping department and provides, among other things, a fully-enclosed loading dock. . . . The new buildings were to have been completed by December 1st

•

Biggert Retires; Rose Succeeds Him

INTERNATIONAL Harvester Company announces that, after forty-seven years of service, Callius F. Biggert, vice-president in charge of the Company's iron and coal mines and Wisconsin Steel Works, has retired, as of November 1st. . . . He is succeeded by Geo. E. Rose, who has been Mr. Biggert's assistant since 1936, and who has recently been elected a vice-president. . . . Mr. Biggert had been with the Company since 1890.

•

Marmon-Herrington Expands Plants

AS FURTHER evidence of the growth of Marmon-Herrington Company, Indianapolis, Ind., announcement was recently made of their purchase of the entire plant and machinery of Duesenberg Motors, Inc., Indianapolis, Ind. . . . The property consists of two large modern factory buildings and a 16-acre tract of ground, providing ample facilities for further business expansion.

WE STOP THEM ALL SAFELY!

❍ Traveling safely at high speed is a matter of *control*. Whether riding in a train, a bus, an airliner landing at a mile-a-minute, or your own automobile, safety depends on being able to *stop in time* in any situation.

❍ For more than 50 years our companies have specialized in the problem of braking. First we supplied brake shoes for railroad trains and street cars. Then we developed a new type of brake lining for motor buses and trucks. This was so successful that we adapted it for passenger automobiles and motorcycles—and now for airplanes.

❍ Different materials are used, of course, but the basic problem of controlling speed safely is the same, and calls for broad engineering experience in the field of braking.

❍ As a truck operator you can reduce your accident risks—and save money on brake upkeep—by using American Brakeblok. It stops the heaviest and the lightest trucks with equal ease.

THE SAFETY BRAKE LINING

American Brakeblok

AMERICAN BRAKEBLOK

SAFEST BECAUSE IT'S BURN-PROOFED

AMERICAN BRAKEBLOK • DETROIT, MICH. • DIVISION OF AMERICAN BRAKE SHOE AND FOUNDRY COMPANY

New WHITE C.O.E.

- *Has Forward-Tilting Cab*
- *Known as 820 and 822*
- *Wheelbases, 109" to 193"*

AT NEWARK'S fourth annual National Motor Truck Show and at the American Trucking Association's Show at Louisville last month, The White Motor Company exhibited for the first time three new truck models—two new heavy-duty cab-over-engine models equipped with somewhat revolutionary, forward-tilting cabs, and a conventional-type model designed and engineered to fill the demand for a lightweight, heavy-duty truck capable of handling maximum payload with minimum chassis weight.

The two latest cab-over-engine models are known as Models 820 and 822, while the conventional-design unit is called the Model 750. All three models attracted wide attention at the truck shows.

With standard wheelbases of 109 inches and optional wheelbases up to 193 inches, the latest White cab-over-engine models are equipped with forward-tilting cabs which allow greater accessibility for engine inspection and repair. By inserting steel shafts into slots built into the cab on either side and below the grille, two men can pull the cab up and forward with ease in a few minutes.

An ingenious locking device located at the rear of the cab, can be worked in an instant. Hinged securely to the frame at the front, the cab, grille, bumper and fenders move forward when the cab is tilted.

The White cab-over-engine Model 820 is powered by a White six-cylinder engine of 434 cubic inches displacement, with bore and stroke of 4-3/16 x 5¼ inches. The engine, monobloc with machined combustion chambers, has a heat-treated counterweighted seven-bearing steel crankshaft, and a vibrational dampner to eliminate all torsional vibration.

The Model 820 has a selective type, five-speed transmission, direct in fourth with helical gears in third, fifth and countershaft drive gears. The speedometer drive is enclosed in the rear of the transmission. With four-wheel, internal-expanding, hydraulically-operated brakes, the new cab-over-engine job has a double-reduction, full-floating rear axle with one-piece cast housing.

Chassis equipment consists of electric horn, combination stop-and-tail light, spare rims, floor and toeboards, radius rods and a thoroughly insulated engine cover which prevents engine fumes and heat from entering the cab.

The White cab-over-engine Model 822 is rated in the 8-10 ton field and has a pressed-steel, heat-treated frame. It is powered by a White six-cylinder engine of 529 cubic inches displacement, bore and stroke of 4⅝ x 5¼ inches, with a counterweighted seven-bearing crankshaft, dynamically and statically balanced. In addition, this cab-over-engine model has a universal type carburetor with exhaust-heated inlet manifold to insure good mixture conditions; a dry, single-plate clutch with heavy-duty type disc; and double battery ignition—a two-spark system with automatic and hand controlled spark advance.

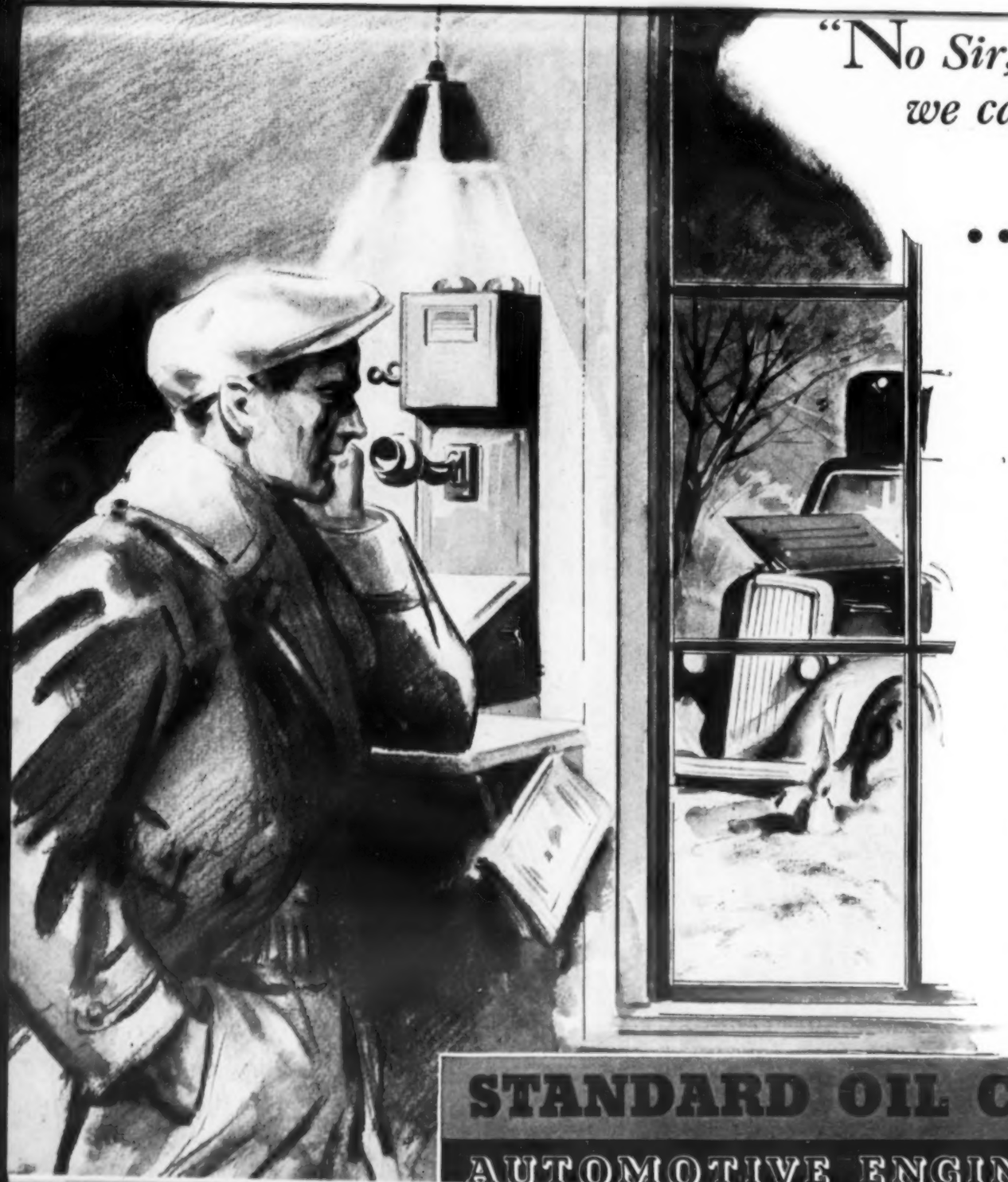
A fifty-gallon gasoline tank is mounted on the right-hand side of the truck and at the rear of the cab. Model 820 has a five-speed transmission, direct in fourth, a double reduction full-floating rear axle, and four-wheel, internal-expanding brakes, air-operated.

Model 750, of conventional design, has a standard wheelbase of 136 inches, optional wheelbases up to

(*Please turn to page* 74)

WHITE'S new heavy-duty, cab-over-engine job is equipped with a revolutionary forward-tilting cab, which makes for greater engine accessibility, as shown here. . . . Steel shafts are placed into slots on each side of the radiator grille and provide the leverage by which the cab, grille and bumper, as a unit, are pulled up and forward. . . . Two models are offered, known as White Models 820 and 822.

"No Sir, it won't go a foot farther and



"No Sir, it won't go a foot farther and we can't get service until morning"

...and there goes the profit on that trip!

ANOTHER shipment delayed—another dissatisfied customer—an expensive service car trip or local repair bill. True, this situation may not occur frequently; but when it does, it leaves a long trail of trouble.

How can you avoid it? That's a question for the Standard Automotive Engineer. He has the answer.

There are sixteen vital points in the power plant of a truck or bus where faulty operation means loss of power, high fuel consumption and, occasionally, complete failure of the motor. The job of a Standard Automotive Engineer is to locate and correct these faults.

For the complete answer call your local Standard Oil office. Ask for an Automotive Engineer. Let him demonstrate, on one of your own units, just what his service can do toward increasing the power and reliability of your fleet and at the same time reduce fuel costs. His service is free—phone today.

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STANDARD OIL PRODUCTS: Solite with Ethyl, Standard Red Crown and Stanolind Gasolines • Iso-Vis, Polarine and Stanolind Motor Oils • Standard Truck and Bus Oils • Standard Gear Lubricants • Standard Wheel Bearing Greases • Standard Fibre Grease • Standard Pressure Gun Greases • Standard Water Pump Grease.

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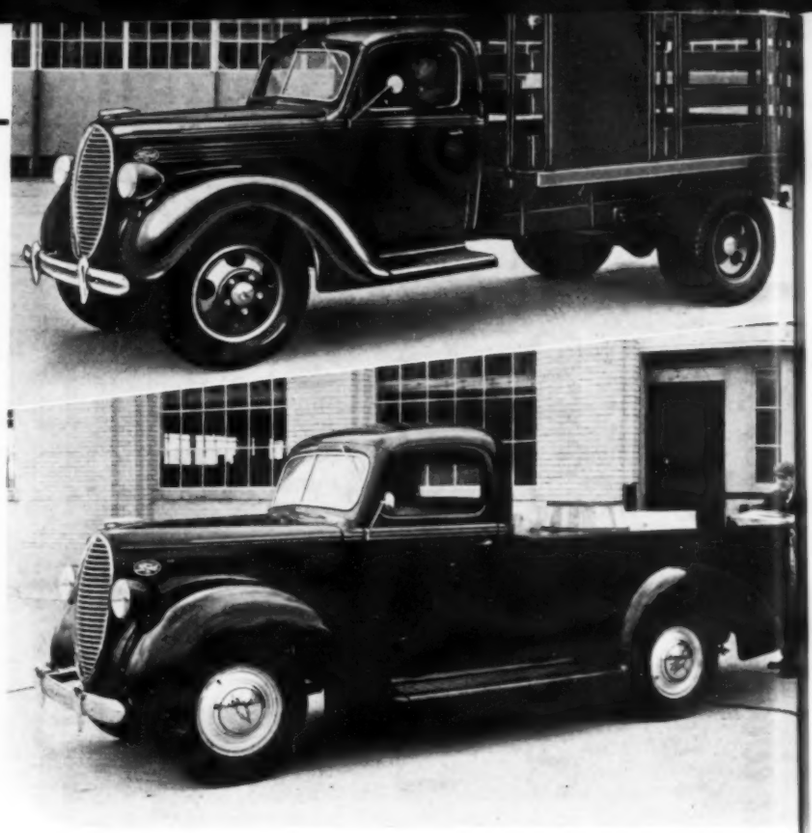
STANDARD OIL COMPANY (INDIANA)

AUTOMOTIVE ENGINEERING SERVICE

LOWERS MILEAGE COSTS



New 1-Tonner Featured *in* 1938 Ford Line

A NEW UNIT—the "one-tonner"—features the 1938 expanded line of Ford V-8 trucks and commercial cars announced recently by the Ford Motor Company, Dearborn, Mich. Intended for widest possible use in the one-ton field, the unit is available in several body types.

The entire range of new 1938 units includes four wheelbase lengths, constituting the most diversified line of Ford trucks and commercial cars in the company's history. New beauty, resulting from advanced styling, and increased performance, obtained through improvement in design, characterize the 1938 Ford V-8 line.

A new treatment of the radiator grille gives the front-end a more massive, impressive appearance. This effect is heightened by long louvres extending horizontally along the sides of the hood. The hood is hinged at the cowl and lifts at the front. It is held down securely by a locking device which serves also as an attractive modernistic radiator ornament.

New style headlamps with brackets faired into the one-piece front fenders add a distinctive touch to the front-end assembly. Starting at the hood side panels, the fenders sweep gracefully rearward in flowing contour effectively continued in panel body and rear fender design. Fenders have rolled edges underneath and are supported with heavier braces. New "straight line" running-boards are lower.

Cab interiors are fully lined with embossed veal grain "art leather" in two tone green. Seat cushions and backs are covered with the same material. It is rubberized and washable. Cab doors are better sealed against outside weather and cab headroom has been increased three inches.

Several changes are noted in the instrument panel. New, easier-to-read figures are used. The instruments have been restyled and regrouped. An ash-tray is now standard equipment. The dispatch-box has a new type door which permits installation of clock and lock. Hardware is of the same type used on standard passenger-cars. There is a foot-operated switch for headlight beam control with an indicator-light on instrument panel.

A new wheelbase length, the 134-inch chassis, replaces the 131½-inch wheelbase of previous years. This chassis has greater load space forward of the rear axle and its frame dimensions permit easier mounting of standard and special bodies. It is available with platform, stake, panel and dump bodies and as chassis-with-cab. As in past years, the 157-inch wheelbase chassis is available with stake and platform bodies and as chassis-with-cab.

New throughout is the "one-tonner". With wheelbase of 122 inches, it is designed to permit wider use of the 60 horsepower V-8 engine in truck operations. It is available with panel, express, stake and platform bodies and as cab-and-chassis.

Stake, panel, sedan delivery, pickup and station wagon bodies are available on the 112-inch commercial car chassis. This may also be had as cab-and-chassis. Stake, panel and pickup have the same front-end design as the trucks.

The sedan delivery has the front-end design of the standard passenger car. The station wagon which carries the front-end of the de luxe passenger car has safety glass windows all around. Windows and the tail-gate can be locked from the inside which, with its door-locks, prevents theft.

An entirely new type of construction is used in building the panel bodies. New methods for forming and welding the side panels, roof rails and roof panel

(*Please turn to page* 74)

If you judge bearings by their associates

THERE are no favorites among the trucks that run on SKF Bearings. From ancient vehicles whose names are almost a memory up to modern high-speed streamliners, you will find SKF's giving low maintenance, quiet performance and long life.

When you specify SKF Bearings for replacement, you, too, are keeping fleet costs down to a minimum. SKF Bearings are easy to obtain in nearly every large city in the country. Write us for the name of your nearest source of supply for replacement bearings. SKF Industries, Inc., Front St. & Erie Ave., Phila., Pa.

3977

SKF

BALL AND ROLLER BEARINGS

LETTERS TO THE EDITOR

1938 TRUCK SHOW

● *Dear Mr. Fischer:* At a luncheon meeting held on November 11, 1937, of the National Motor Truck Show exhibitors, it was resolved, and unanimously carried, to hold the 1938 Annual National Motor Truck Show in Commerce Hall of the Port of New York Authority Building, located at 111 Eighth Avenue, New York City, November 9 to 16, 1938.

We wish to take this opportunity to express our sincere appreciation of your splendid cooperation and support of the Fourth Annual National Motor Truck Show and sincerely hope that you will be with us in 1938.—*A. L. Rice, Secretary, National Motor Truck Show, Inc., Newark, N. J.*

●

TIP ON FLARE BATTERIES

● *Dear Mr. Fischer:* We think you will be interested in informing your readers of the following data regarding the proper installation and use of electric flares, particularly with respect to the life of the batteries thereof.

A few scattered complaints have been made regarding the apparent short life of the batteries in flares and investigations have revealed that the trouble quite definitely has been caused by the installation of the flares in locations exposed to heat from the engine or from the exhaust system. *Heat ruins batteries!*

When exposed to heat, a dry cell will be ruined quickly or slowly, depending on the severity of the heat. If the temperature is high and exposure to the temperature is prolonged, the battery will be ruined quickly. In such cases failure is usually accompanied by leakage, because severe temperature conditions make a battery "spew". Where the temperature conditions are less severe, it will take longer to ruin the battery. In the latter case, no leakage may occur; the cells in the battery merely drying out and giving no external evidence of having gone dead. Nevertheless, when called upon for service in an emergency, the battery will give little or no light, thus destroying its effectiveness and defeating the purpose of installing it.

Temperature conditions vary widely with individual trucks, even in the same location on identical models. Because of this, batteries improperly installed on a fleet of identical trucks will not all fail at the same time. Failure will occur earlier on trucks engaged in long hauls, because in these cases the engines run almost continuously and exposure to high temperature is prolonged.

If the fleet is made up of trucks of various sizes and makes, and if there is no standardized location for the flares, the variation in time required to ruin the batteries will be even greater. If the fleet operator uses two different makes of batteries, it is entirely possible that one make may appear to be better than the other because the early failures may be confined largely, if not wholly to one make.

If improperly installed, however, it is only a question of time as to when the battery will be ruined. The make of battery has nothing to do with it in this case, as heat will ruin a battery of any make. This is true of all types of batteries, whether made of 6-inch cells, flashlight unit cells or made-up batteries of other types. Heat is no respecter of size, shape or make of dry batteries.

To further complicate the situation it must be remembered that low temperature temporarily puts a battery out of commission. Low temperature will not damage the battery, but when cold, its working voltage will be reduced so low as to result in only a dim light for a short time, or no light at all. One suggested location for the flare is to sling it from the under side of the truck near a rear wheel on the side farthest away from the exhaust pipe. This might work out all right in the summer, but in the winter, in certain parts of the country where extreme cold is experienced, a flare so exposed may not function satisfactorily when several hours out of a heated garage.

The problem of installing an electric flare on a truck boils down to finding a location which will keep the battery cool in summer and warm in winter. Admittedly this may be difficult, but it is rendered necessary by the inherent and unchangeable nature of batteries.

We are calling these facts to your attention with the thought that you may wish to warn the readers of your publication that proper location of electric flares is an important factor in the battery life of the units. —*Wm. H. Wilson, National Carbon Company, New York, N. Y.*

●

"THE I.C.C. AND YOU"

● *Dear Mr. Fischer:* Representing, as we do, a large portion of the motor carriers in this territory, it is necessary for us to keep up on developments in the truck field, and we enjoy reading your publication, FLEET OWNER, each month very much.

However, in your editorial on page 15 of the October issue, entitled, "*The I.C.C. and You*", you have made a statement that is somewhat incorrect, which we believe that you would desire to correct if it were brought to your attention.

You stated, "The Interstate Commerce Commission (thus far) is only supervising the operations of for-hire operators whose vehicles pass through *more than one state.*" You also stated, "If you are in the for-hire business and if your operations *cross a state line* at any point, get into touch with the local office of the Interstate Commerce Commission."

I wish to call your attention to the fact that the Interstate Commerce Commission has jurisdiction and is taking jurisdiction of operations wholly within a state, if such operations involve the movement of interstate commerce.

In the state of Oregon, practically every carrier operating in that state must have a certificate or permit from the I.C.C., in order to be able to operate, inasmuch as 90 per cent of all the traffic in Oregon is interstate in character, even though it moves between points within the state and does not cross a state line.

The Interstate Commerce Commission has stopped carriers from transporting freight in interstate commerce between points in the state of Oregon, and not crossing any state lines.

I am sure that if you will contact the I.C.C. offices, they will confirm the above statement.—*Millen F. Kneeland, Kneeland & Ganoe, Portland, Ore.*

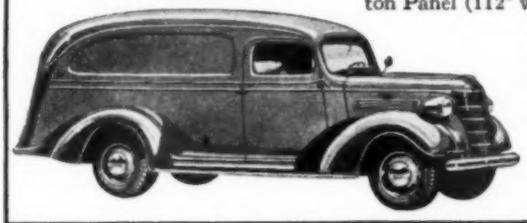
Now on display!
NEW 1938 CHEVROLET TRUCKS

"THE THRIFT CARRIERS FOR THE NATION"

The most complete line of trucks

IN THE LOW-PRICE FIELD

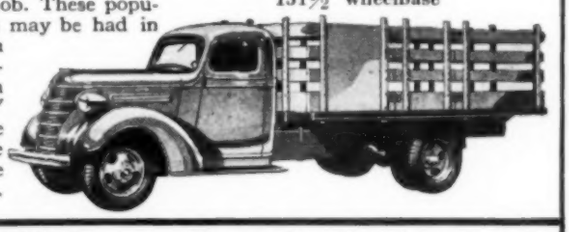
NEW CHEVROLET HALF-TON PANEL
112″ wheelbase



The new Chevrolet Panel Deliveries are available in four chassis sizes: the Sedan Delivery (112¼″ wheelbase), the half-ton Panel (112″ wheelbase), the ¾-ton and 1-ton Panels (122¼″ wheelbase), and the 1½-ton Panel (131½″ wheelbase).

NEW CHEVROLET 1½-TON STAKE
131½″ wheelbase

Chevrolet offers a wide variety of Stake and Platform bodies on wheelbases that will give great utility on every job. These popular Stake trucks may be had in ¾-ton and 1-ton on 122¼″ wheelbase, 1½-ton on 131½″ and 157″ wheelbases. The stock racks are mounted on the 157″ wheelbase.



NEW CHEVROLET ¾-TON PICK-UP
122¼″ wheelbase

The new Chevrolet Pick-up is available in a wide range of sizes. The new Coupe Pick-up (112¼″ wheelbase) combines new passenger car comforts with commercial utility. Other models include the half-ton on 112″ wheelbase, the ¾-ton and the 1-ton on 122¼″ wheelbase, and 1½-ton on 131½″ wheelbase.

CHEVROLET
THE SYMBOL OF SAVINGS

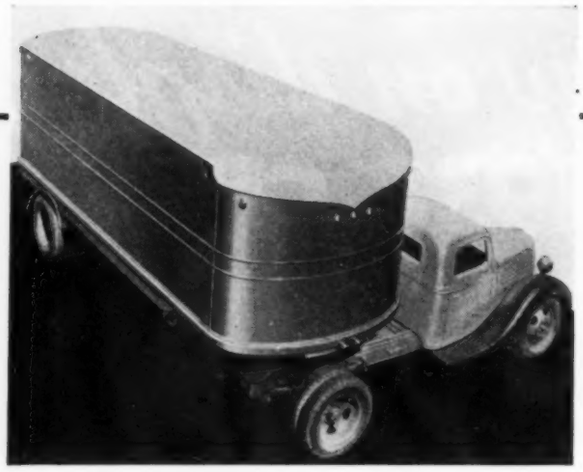
MODERN APPEARANCE
¾-TON and 1-TON CHASSIS
FIVE WHEELBASE LENGTHS
MODERN BODY EQUIPMENT
MASTERLY PERFORMANCE
LONG LIFE and STABILITY
ECONOMY OF OPERATION and MAINTENANCE

CHEVROLET MOTOR DIVISION
General Motors Sales Corporation
DETROIT, MICHIGAN

General Motors Installment Plan—monthly payments to suit your purse. A General Motors Value

THERE IS A NEW CHEVROLET TRUCK TO MEET YOUR HAULAGE REQUIREMENTS

See your Chevrolet Dealer



Fruehauf Offers New Trailers, Bodies

•

IMPROVED trailer underconstruction, recently announced, promises safer and lower cost haulage. . . . New power-brake system, springs and body are featured.

STILL greater economy in trailer operation, and increased protection for both load and unit, are said to result from recent major improvements in haulage equipment designed and built by the Fruehauf Trailer Company, Detroit, Mich.

Among the improvements are changes in frame, springs, spring-shackles and hangers, radius-rods, etc. A new and improved body (illustrated) is also offered.

Frame material is SAE-1020, semi heat-treated. All frames are of the new fish-belly design, with straight section at rear and front frame extension as standard. Approximately 15% in strength is gained by a 1" increase in frame depth just ahead of the drop; and the drop itself is increased from 3" to 4", with a substantial saving in weight. A new box-type cross member at the front spring-hanger contributes further stability and strength.

The new improved "Government" spring-eyes, double-wrapped for greater strength, now used in Fruehauf springs, and the rebound leaf (now standard on all models), reinforce the springs to withstand both rebound and brake torque load—providing increased protection and lower operating cost, it is claimed.

Spring-shackles, drop-forged and heat-treated, are now straddle-mounted on the outside of hangers; and the hangers, extending down between the shackles, support the shackles and prevent leaning in case of non-adjustment.

Outside shackles are thicker by 28%, and wider, and are pinch-bolted to the shackle-bolt — for greater strength without additional weight.

New box-type spring hangers, both front and rear, give much greater bearing area with increased spread on the frame, furnishing more frame support. Front hangers, now 2½" wider—an increase of approximately 40%—are not only stronger, but provide for a separate attachment of radius rods and shackles.

Radius rods, now mounted at both ends on heavy-duty type rubber bushings, not only give considerable flexibility under heavy loads and over uneven roads, but eliminate the transmission of twisting stresses from axle and frame and cushion all road shocks—thus safeguarding the payload, permitting less wear and lessening maintenance requirements, the engineers declare.

On models 1 and 2, the supports hinge-bracket on the frame has been enlarged to provide increased stability and strength—thus giving practically the same supports hinge-design on all Fruehauf trailer models.

Smoother, more powerful and faster brake action result from recent improvements in the braking system used on Fruehauf trailers, according to the factory's announcement.

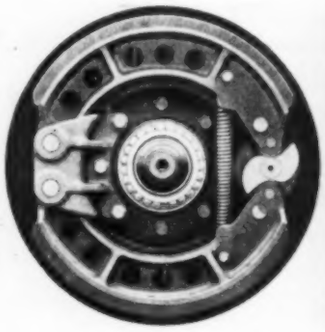
Of a proven, axle-mounted design, this entirely new vacuum type brake system has oversize diaphragms, providing maximum power. The brake valve action is said to be very fast, and the mechanism has fewer moving parts. Other features include 100% equalization; shielded-type air vents to keep out dust, ice and wind; and a 3,000 cubic-inch emergency-tank as standard.

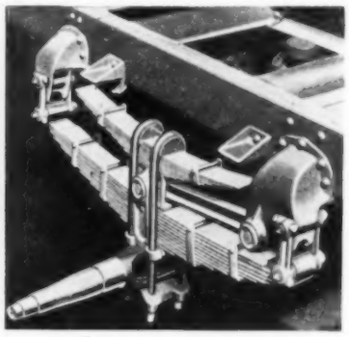
The new vacuum-power system is used in conjunction with special Fruehauf-built trailer brakes. These have roller-bearing action to reduce friction, lessen "drag" and to lower gasoline consumption.

Brake drums are made of Meehanite alloy, said to be a brake drum material able to withstand even the severe brake applications of Rocky Mountain service. More metal is provided in the drums, giving faster heat-dissipation and greater tire protection.

Brake shoes, of 4½", 5½" and 6" sizes, are roller-bearing, on a big heavy-duty "S" cam, reducing friction to a minimum, using all the power for braking and providing smoother application. Brake lin-

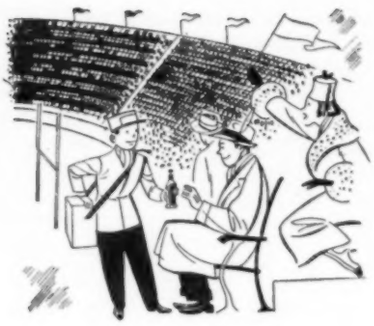
(*Please turn to p.* 64)





AT THE LEFT is shown Fruehauf's new trailer brake, with roller-bearing action on each brake-shoe, to reduce friction and drag. . . . At the right is a view of the new spring construction, featuring double-wrapped spring-eyes and rebound leaf.

1,000,000,000 BOTTLES A YEAR IS A *Real* ACHIEVEMENT*



*That's the estimate for Pepsi-Cola's 1937 production—and it takes a lot of trucking to handle about a quarter of the beverage market's volume on soft drinks.

Pepsi-Cola stakes its success mostly on extra value in the bottle. But Pepsi-Cola believes firmly too, in making its fleet effective travelling billboards. Says Pepsi-Cola, "Our trucks must be painted to protect our investment, why not capitalize on the advertising value of a finish so exceptionally beautiful, and so easily and economically maintained we can count on leaving the most favorable impression possible with the hundreds of thousands who see the Pepsi-Cola fleet en route?"

That's why Pepsi-Cola uses Sherwin-Williams Kem Transport Enamel. This truly modern finish boasts remarkable brilliance of color, a natural porcelain-like sharp lustre, and durability that defies every road, weathering and service extreme. Kem is fast and easy handling, and requires a minimum of time, labor and material expense. Why not try it for your fleet? See your O-K Automotive Jobber or write for details to The Sherwin-Williams Co., Cleveland, Ohio.

SHERWIN-WILLIAMS

KEM

TRANSPORT

ENAMELS

New Device to Eliminate Under-Inflation

A NEW DEVICE has recently been perfected, called the "Tire Deflation Indicator", the purpose of which is to provide an automatic warning to the driver, by means of a signal-light on the dash, the moment that the air-pressure in any of his tires falls below a predetermined point. The value of such a device for tractor-trailer operation is obvious.

Basically, the indicator consists of a small casting attached to each wheel, near the hub, inside of which is a spring-controlled piston which causes electrical contact to be made (through a collector-ring) with a "brush" installed on the backing-plate, which, in turn, is wired to a warning light on the dash.

The spring is calibrated so that the correct air-pressure in the tire will keep the piston away from the contact, and no electrical contact is made, so long as the proper pressure is maintained. Should the air-pressure drop, as little as 10 per cent below normal, the spring will push the piston against the contact, thus completing the circuit, and lighting the warning light on the dash.

Since the Tire Deflation Indicator operates on the "open circuit" principle, no electric current is used, except when the warning is flashed. There is only one moving part and the main casting of each indicator is of bronze. In the accompanying illustration one is shown installed on each of the tandem wheels in the inset. The schematic drawing gives a rough idea of the installation hook-up. The small hose shown carries the air from the tire-valve to the indicator.

This device has been tested for the past year by fleet operators in the East and has been found desirable, particularly on trailers, where the driver is not easily made aware of partially-deflated tires without such a device. The maker claims that any fleet can materially reduce its tire costs through the use of it. . . . For further details, installation data, etc., address Tire Deflation Indicators, Inc., 815 Bergenline Ave., Union City, N. J. . . . Mention of FLEET OWNER always helps.

●

Gets Gold Medal for Safe Driving

THE distinction of achieving the best safety record in the United States among operators of milk company motor vehicles, recently went to George L. Smith, an employee of the Mitchell Dairy Company at 745 North Avenue, Bridgeport, Conn., a subsidiary of The Borden Company.

Mr. Smith was awarded the gold medal of the International Association of Milk Dealers at its 30th annual convention recently held in Dallas, Tex. The presentation, which was made by R. C. Fisher, of Wellesley, Mass., president of the Association, was attended by Abner W. Mitchell, president of the Mitchell Dairy Company.

It was the first time the Association had made such an award and the medal was given to Mr. Smith after the records of thousands of drivers throughout the United States had been examined.

In a period of eighteen years Mr. Smith operated motor vehicles a total of 796,150 miles without accident. Most of his driving for the company was in hauling truckloads of milk to Bridgeport from country dairy farms.

●

Diesel Engine Powers This Fire Truck

THIS fire-fighter is a Stutz model F-D unit with a wheelbase of 173 inches. Capable of pumping 1,000 gallons per minute, it represents many late engineering practices. A six-cylinder Cummins Diesel, rated at 155 hp at 1,800 rpm, drives the truck through a Fuller five-speed transmission and a Timken worm differential.

When at the fire the Diesel engine drives the geared positive-displacement rotary fire-pump. At 120 pounds pressure its capacity is 1,000 gallons per minute; at 200 pounds pressure, 500 gallons is discharged. Hydraulic brakes are provided on both the front and rear wheels. Two large reels and two ladders are standard equipment.

Features credited to the Diesel engine for use in fire-trucks are its ability to instantly start regardless of weather conditions—ability to take the load almost immediately, without choking or flooding—immunity to being killed by water getting on ignition wires, or in carburetors because the Diesel has neither—and the reduced fuel consumption.

It is not uncommon for fire trucks, at a stubborn fire, to need refueling. Transferring gasoline under such circumstances is sometimes a risk; with a Diesel-powered fire-fighter, the interval between refuelings is only about half as often and when necessary it can be done with less danger, as fuel-oil is less volatile.

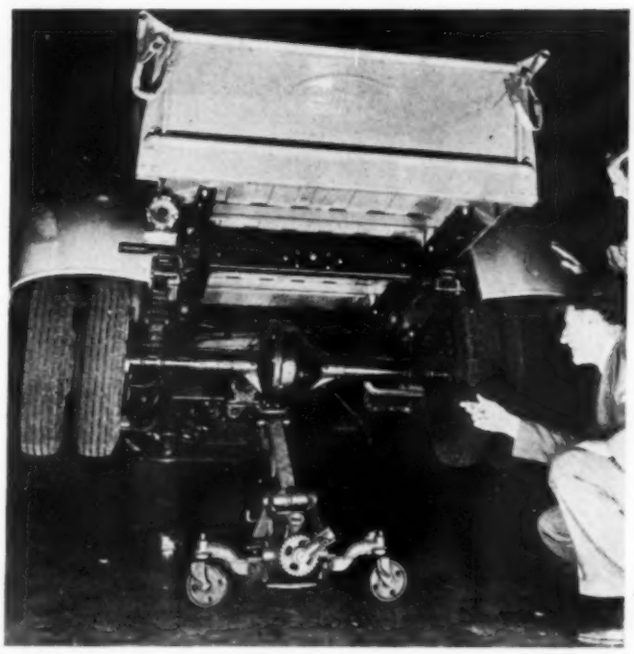
The Diesel used in this new truck is identical to the thousands of Cummins Diesels operating all over the United States by highway truckers.

GMC Offers 3 New Light-Duty Trucks

THREE new light-duty GMC trucks, including a new ¾-tonner, a new 1-tonner and a new 1¼-ton model, are announced for 1938 by General Motors Truck and Coach Division. . . . In addition, many new features of mechanical design have been added to every chassis in the GMC line of conventional and cab-over-engine trucks.

The new units introduced for 1938 are the ¾-ton T-145 with a gross vehicle weight of 5,300 lbs.; the 1-ton T-15 with g.v.w. of 6,000 lbs.; and the 1¼-ton T-155 with g.v.w. of 7,000 lbs. Model T-145 is offered in a 126″ wheelbase and maximum 15″ (7.50/15) single tires; model T-15 is offered in a 131½″ wheelbase with maximum 7.50/17 single tires; and Model T-155 in a 131½″ wheelbase with maximum 7.00/16 dual tires.

A new engine of 223-cubic inch displacement, designed for rapid, light-delivery service, furnishes the power for all three new models. Among the features of this new engine are full-length water-jackets; a packless water-pump with automatically adjustable seal; electroplated cast iron pistons; counterweighted crank-shaft and harmonic balancer; full-pressure lubrication; rifle-drilled connecting-rods; metered oil flow; pressure-suction crankcase ventilation; gusher valve cooling; vacuum-controlled distributor with gas selector; ventilated type generator with auxiliary light-switch control; high-compression cylinder head and others. This engine is also used in the ½-ton units.



Other mechanical features common to all three of the new light-duty models include big rear springs, husky spring brackets and shackles, heavy frames, new rear axles with massive housings (T-155 has a full-floating rear axle, illustrated) and three-speed syncro-mesh transmission standard with four-speed transmission optional.

Panel bodies 101″ in length, pick-up bodies 91″ in length, and stake bodies 91-11/16″ in length, are available in the new ¾-ton unit, while both the new 1-ton chassis and the 1¼-ton unit will accommodate 9-foot panel, pickup and stake bodies.

Improvements in the conventional models include new anti-friction axle thrust bearings in the 4-ton to 8-ton units, five-speed transmission now standard in all 4-ton units, improved transmission oil seal in the 2½-ton to 6-ton units, heavy channel front bumpers in the 2½-ton to 8-ton units and increased maximum tire size on the two and three-ton units.

(*Please turn to page* 64)

RINGING IN HEALTH...

and protection against tuberculosis

BUY and USE them

THE 1937 CHRISTMAS SEALS

THE NATIONAL, STATE, AND LOCAL TUBERCULOSIS ASSOCIATIONS IN THE UNITED STATES

Dodge Offers 1938 C. O. E. 3-Tonner

•

ANNOUNCEMENT was made by Dodge last month of a new three-ton, cab-over-engine truck that is added as a standard unit to its well-diversified truck line. This new unit is built for heavy-duty work and permits a longer body on a given wheelbase length, or a shorter overall length when it is used as a tractor for pulling semi-trailers and trailers.

Specifications follow: The engine has six cylinders and is of the L-head type, with 3¾ in. bore and 5 in. stroke. Piston displacement is 331.34 cu. inches and the engine develops 100 h.p. at 2,800 r.p.m. Its S.A.E. rating (A.M.A. rating) is given at 33.75 horsepower. Compression ratio is 5.2 to 1.

Pistons are aluminum alloy of the steel-strut type with slotted skirt. Each piston has four rings in order to provide a perfect oil-seal.

Frame of this new three-ton unit is of hot-rolled steel, 5/16 in. thick and 8-9/32 in. in maximum depth. Width of the flange of the frame steel is 2-7/8 in. Width of the standard frame at the rear is 34-3/16 in., and this varies in length, according to the wheelbase.

Standard wheelbase lengths offered are 96 in., which has a frame length of 182-19/32 in.; 108 in. wheelbase with a 219-3/32 in. frame; 122 in. wheelbase with a 233-3/32 in. frame and the 140 in. wheelbase with a frame of 251-3/32 in. length.

There are six cross-members, including the motor support, on the 96 in. wheelbase frame; seven cross-members on the frames used on the 108 in. and 122 in. wheelbase jobs; and eight cross-members on the frame used on the 140 in. wheelbase length models.

Cross-members on the 96 in. wheelbase have been embodied in the frame at the following points: Radiator, motor support, intermediate, rear spring front bracket and two at the rear spring rear bracket. One of the rear cross-members is of the X-type, thus making the frame adequately strong and rigid.

Springs are made of Amola steel and are semi-elliptical. The front springs are 46 in. long, 2½ in. wide and have 11 leaves. Length of the rear springs is 52 in. and they are 3 in. wide ten main and six auxiliary leaves. Shock absorbers are of the double-action type and are 2¼ in. in diameter. They are standard equipment on the front, but may be had as optional equipment on the rear.

Transmission of this model provides five forward speeds and one in reverse, with the following ratios in each: First, 7.58; second, 4.38; third, 2.395; fourth, 1.478; fifth, direct, and reverse, 6.10. A power

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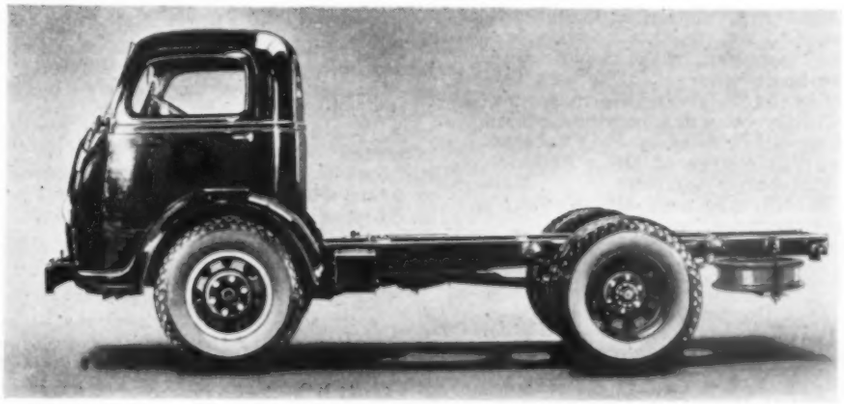

CAB INTERIOR and side views of Dodge's new cab-over-engine 3-tonner. . . . The two large seats in the cab are separated by the insulated engine cover which tapers down toward the rear of the cab floor. . . . Large glass panels in the divided windshield and doors permit a good range of vision. . . . The gear-shift lever may be seen at the right, in convenient position for the right hand of the driver.

A.S.I. Show Facts at a Glance

THE ANNUAL Automotive Service Industries Show, jointly sponsored by the N. S. P. A., M. E. W. A. and the M. E. M. A., will be held Monday through Saturday, December 6 to 11, at the Navy Pier, Chicago, Ill. At this writing there were 373 exhibitors signed up, using 1,010 booths and a display area of 110,000 sq. ft. . . . Jobbers' guests (this includes fleet operators) will be admitted on Thursday, Friday and Saturday. . . . Tickets may be secured from your local automotive jobber, without cost.

•

Sees Peak Automotive Market in 1938

THE SUSTAINED upward trend in sales of automotive parts during 1937, following substantial gains in 1934, 1935 and 1936, indicates a peak market in 1938, in the opinion of W. S. Isherwood, general sales manager of AC Spark Plug Division of General Motors. . . . The first 11 months of this year, Mr. Isherwood said, will establish a new all-time high in the sale of spark plugs, a product generally regarded as a barometer of the trend in the automotive parts industry. . . . The upward movement in spark plug volume, he stated, was most pronounced during November.

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Crowder Named Sales Promotion Head

VAN NORMAN Machine Tool Company, Springfield, Mass., announces the promotion of Charles R. Crowder to the position of sales promotion manager, with headquarters at the home office. . . . He was formerly in charge of Van Norman's Pacific Northwest sales territory, which position will be filled by Phil Moulton, recently in charge of their Philadelphia-Pittsburgh territory. . . . Nels Abbott will take over Mr. Moulton's former territory.

•

New Warehouse for Hoof

PRODUCTS of the John C. Hoof Company and the Hoof Products Company, 162 N. Franklin St., Chicago, Ill., are now being warehoused by the T. F. Barsby Company, 1822 Broadway, Seattle, Wash. . . . These lines were formerly handled in Seattle by Automotive Warehouse Company at 1428 Harvard Avenue.

Kliesrath Now Bendix General Manager

VICTOR W. KLIESRATH has recently been appointed general manager of Bendix Products Corporation, South Bend, Ind. . . . Vincent Bendix, president and general manager of Bendix Aviation Corporation, made the appointment. . . . Mr. Kliesrath has been vice-president and a director of Bendix Aviation Corporation, and director of engineering of Bendix Products Corporation. . . . Bendix Aviation Corporation, for the more practical operation of its business under present-day conditions, has been working out plans for the changing over of the corporate structure of some of its operating plants as "divisions", instead of subsidiaries.

•

Glen Treslar Promoted at B. & D.

APPOINTMENT of Glen H. Treslar as assistant sales manager of the Black & Decker Mfg. Co., Towson, Md., has been announced. . . . Mr. Treslar has been connected with the organization for over fifteen years in the capacities of territorial salesman, branch manager and more recently as supervisor of the Cleveland and Detroit areas. . . . His headquarters will be at the home office in Towson, Md., assisting Robert D. Black, sales manager.

•

Auto-Lite Plugs on Nash, Plymouth, DeSoto

ELECTRIC Auto-Lite Company, Toledo, Ohio, announces that Auto-Lite spark plugs have been adopted as standard factory equipment by Nash, Plymouth and DeSoto for 1938. . . . To step up production for increased demand, the Company is rushing to completion an expansion program which will triple the output of its spark plug plant at Fostoria, Ohio.

•

Lincoln Electric Appoints Schuster

LINCOLN Electric Company, Cleveland, Ohio, announces the appointment of Robert H. Schuster to the sales staff of its Pittsburgh office, located at 926 Manchester Blvd. . . . The Pittsburgh office offers welding engineering service and supplies welding users with arc-welding equipment. . . . W. R. Persons is district manager.

Fowler Joins G. M. Engine Group

APPOINTMENT of Volney B. Fowler to have charge of public relations of the General Engines Group of General Motors Corporation, was recently announced. . . . Mr. Fowler will supervise advertising, press relations and other public relations activities of the divisions and subsidiaries in the group, which includes Winton Engine Company, Electro-Motive Corporation, the Diesel Engine Division at Detroit, and the Allison Engineering Division of General Motors Corporation.

•

Smith Gets "Morehead" Medal

H. SIDNEY SMITH has been awarded the James Turner Morehead Medal for the year 1936, in appreciation of his vision, inspirational guidance and aggressive cooperation in the advancement of the acetylene industry. . . . The medal was presented to Mr. Smith during the recent Annual Convention of the International Acetylene Association, held in Birmingham, Ala. . . . Mr. Smith has also recently received the Samuel Wylie Miller Medal awarded by the American Welding Society, and is the first to receive these two awards at the same time.

•

Lincoln Opens Phoenix Office

LINCOLN Electric Company, Cleveland, Ohio, makers of arc-welding equipment, announces the opening of a new sales office in Phoenix, Ariz., which is in charge of R. J. Reardon. . . . Present or prospective users of arc-welding equipment in that vicinity are invited by Lincoln to feel free to call on Mr. Reardon for assistance in any phases of arc-welding, design or application. . . . The office maintains a stock of the various models of arc-welders, electrodes, etc., made by that Company.

•

Bakery Fleet Man Seeks Position (Adv.)

FLEET Maintenance Man, with 16 years of experience in bakery truck operation, seeks connection with bakery or other fleet of moderate size. Familiar with all phases of maintenance and repair work and can keep costs to a minimum. . . . Closing up of local branch has resulted in my present availability. . . . Best of references furnished. . . . For an interview address J. B., c/o Editor, FLEET OWNER, 90 West St., New York, N. Y.

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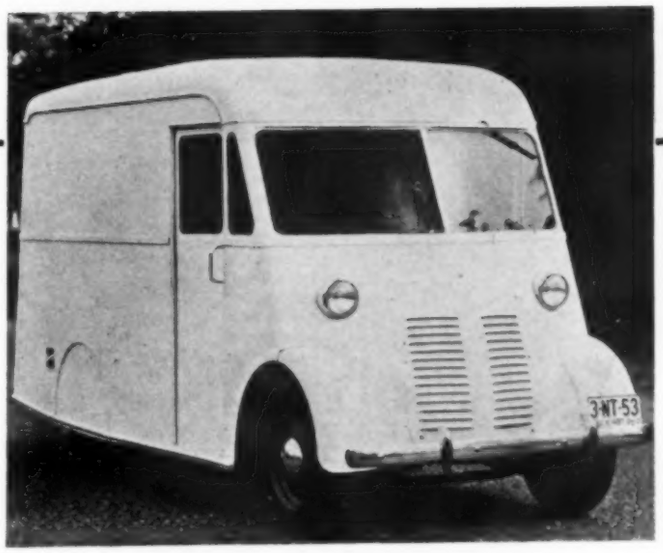
Sales Representative Available (Adv.)

MANUFACTURERS: If you are in need of a high-class producer of automotive parts sales, with a wide following among jobbers, and specialized experience in selling fleet executives, there is available a man with a fine record of successful results. . . . He lives in the East and can handle your line in any Eastern, Southern or South-Eastern territory. . . . A postcard to The Editor, FLEET OWNER, 90 West St., New York, N. Y., will start negotiations.



3 Models *in* 1938 Willys Truck Line

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PICK-UP, Stake and Door-to-Door Delivery Unit are featured on half-ton chassis with 100-inch wheelbase and 134-cubic-inch engine

ENTRY of Willys-Overland Motors, Inc., Toledo, Ohio, into the commercial car field with the three half-ton models illustrated on this page, was announced last month at both the New York Automobile Show and the Newark Truck Show.

A light economy cab pick-up of 750 pound capacity was also announced, and other bodies on the half-ton truck chassis are promised in the early future, so that the line will be complete and will include the following models: Light economy pick-up; half-ton pick-up, stake, canopy-top, stock-rack, grain-box, public-utility, and cab-over-engine door-to-door delivery unit.

The cab-over-engine door-to-door delivery unit (illustrated above) is mounted on the standard half-ton Willys chassis, and has a full panel body 90 inches long, 63 inches wide and with 62 inches "in the clear" inside the body. Frame of this body is of all-steel construction, with metal-faced plywood panels.

Flooring in the door-to-door unit is of hardwood. A single driver's seat is mounted on an adjustable support. Good side and front vision is obtained by the arrangement of the divided windshield and the arrangement of the windows in the doors on either side. Axle design is such as to give high clearance front and rear, and a special low-ratio truck rear-axle is standard equipment.

Wheelbase of the door-to-door unit (as in other Willys truck models) is 100 inches; turning radius is 17 feet. Production in quantity is now under way and deliveries are starting. This model is especially designed for use by bakeries, dry-cleaners, florists, house furniture companies, laundries, and others requiring half-ton capacity vehicles with large body capacity and easy handling.

The stake and pick-up jobs, also illustrated, are mounted on the same 100-inch wheelbase chassis. Cabs are of all-steel construction, insulated against heat and sound. Standard tires will be 16 x 5.50, with oversizes available in 16 x 6.00, 4-ply and 6-ply.

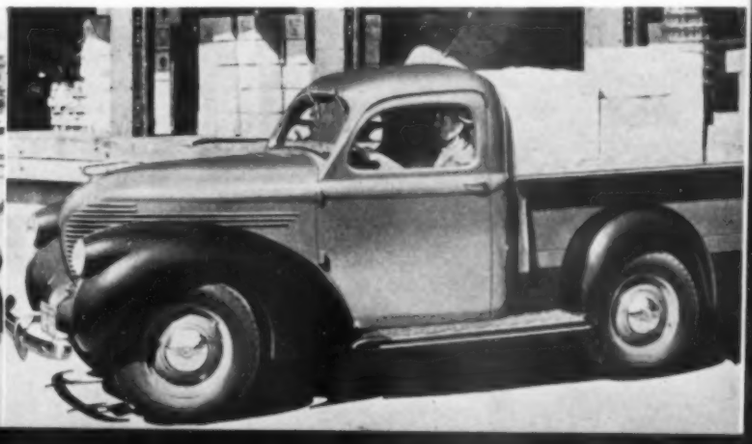
Flexible front springs and two-stage rear springs are used. The modified two-stage rear springs are designed to provide a soft ride when the truck is empty or carrying light loads. Lower leaves (the second stage) add the necessary capacity for heavier loads.

The engine used in all Willys commercial units is the standard Willys job, a 4-cylinder, L-head engine with 3⅛ inch bore and 4⅜ inch stroke, giving 134.2 cubic inches of piston displacement, on which the taxable horsepower is 15.63. The maximum delivered horsepower is 48, developed at 3,200 r.p.m.; torque is 100 pounds-foot at 1,400 to 1,900 r.p.m.

Crankshaft of this engine is 2.33 inches in diameter, with three main bearings. Main bearings are 2.33 inches in diameter, and total 5.86 in length. They are of the replaceable type. Full-pressure lubrication is provided, with "Float-O" oil intake at the oil-pump. Capacity of crankcase is four quarts. Rubber mountings are used and exhaust valve-seats are of the hardened alloy steel, insert-type.

Four piston rings per piston are used in this engine, one of which is an oil ring. A Tillotson carburetor of the down-draft-type is standard. Auto-Lite igni-

(*Please turn to page* 66)



Bantam Offers Commercials

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PANEL and PICK-UP are offered on ¼-ton Bantam chassis. . . . Here are the complete specifications, direct from the factory engineers at Butler, Pa.

HERE are pictures of America's smallest commercial vehicle, the first Bantam "60" trucks to come from the assembly line of American Bantam Car Company, Butler, Pa.

The complete Bantam "60" line, consisting of coupes, roadsters, and panel and pick-up trucks was shown for the first time in the Roosevelt Hotel, New York, during the New York Automobile Show. They were also shown at the Chicago and San Francisco Shows. Truck models were exhibited in the Truck Show, Newark, N. J. A. C. Olander, sales manager, is now assigning territories for nation-wide and export distribution.

These vehicles are being built complete in the company's modern 14-acre automobile factory at Butler, Pa. A continuous daylight assembly line, capable of delivering a completed car every five minutes provides straight-line handling under one roof, from the point where materials are received, to the warehouse for assembled cars.

Performance claims include the fact that this vehicle will go up to 60 miles on a gallon of gasoline; will attain a speed of 60 miles an hour; and can be operated at a cost of less than three-quarters of a cent per mile for gasoline, oil and tires.

Complete technical specifications, direct from the factory engineers, are listed here for your convenience:

ENGINE: Four-cylinder, cast en-bloc, L-head type. Bore, 2.2". Stroke 3". Piston Displacement, 45.6 cu. in. S.A.E. Rating, 7.8 H.P. Actual Brake H.P., 20 at 3,900 RP.M. *Head,* aluminum, high-compression, with turbulence-type combustion chambers. *Pistons,* aluminum alloy, autothermic, split-skirt, tin-plated, invar-strut type. *Crankcase,* aluminum alloy. *Fan Bracket and Attachments,* aluminum. *Water Jackets,* full-cooling, directional circulation. *Cylinder Walls,* mirror finish. *Crankshaft,* drop-forged, counterweighted statically and dynamically balanced. *Connecting Rods,* H-section, drop forged, heat-treated, alloy steel. *Intake Valves,* chrome nickel steel. *Exhaust Valves,* chrome silicon steel. *Lubrication,* positive vane type, force feed to all rods. *Camshaft,* nickel alloy steel, precision ground, silent, helical-gear driven. *Firing Order,* 1-3-4-2. Mounted in live rubber.

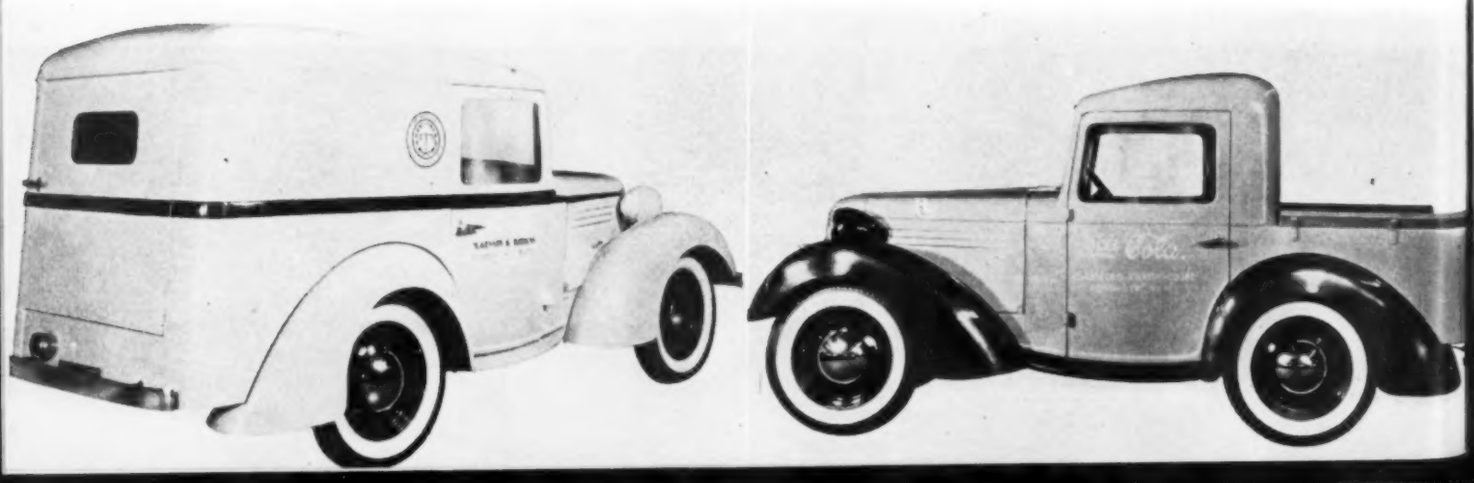
ELECTRICAL SYSTEM: 6-volt, 2-unit type. Current-regulated generator. Full automatic control.

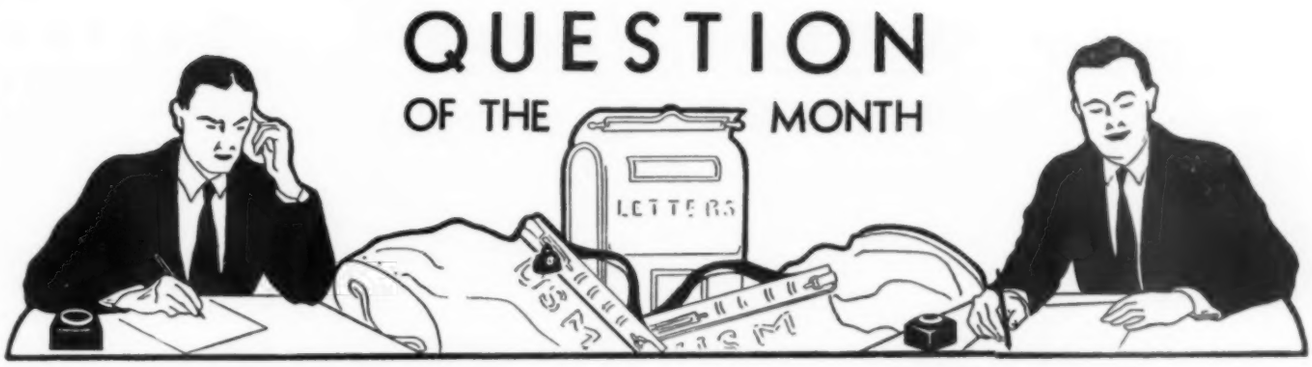
CARBURETOR: Adjustable jet; special calibrated design.

CLUTCH: Single-plate,

(*Please turn to page* 66)

THESE four photos are of the first jobs built. The one at the top shows the new front. An idea of the load space is shown directly above, while actual photos of the two commercial models are shown below.





Fleet Experiences *with Reference to* Welding

(Here's How You Can Get the Complete Picture on this Controversial Subject:)

THIS MONTH we are taking up the subject of Welding. The questionnaire below is the only practical means that we can employ to gather the necessary data from all sections of the country at one time. It is the first step!

In order to receive the complete data which this questionnaire will bring, it is necessary that you participate in our survey, by tearing out the blank, filling in the answers to as many questions as you can (or as you care to) and mailing it back to the Editor.

In return for a few minutes of your time, you'll get a private and personal copy of the summary, giving a representative picture of the subject under discussion. Your name is never mentioned in these surveys. Thanks, a lot, for your cooperation.—H. C. F.

(Please tear out and mail to The Editor, The Fleet Owner, 90 West St., New York City)

Question No. 83—Welding and Cutting

Do you do your own acetylene welding? ☐ Yes; ☐ No. Do you do your own electric welding? ☐ Yes; ☐ No.

If so, what welding equipment do you have? (Please check below)

ACETYLENE—☐ Welding Torch (Heavy) ☐ Cutting Attachment ☐ Lead Burning Torch
☐ Welding Torch (Light) ☐ Separate Cutting Torch ☐ Carbon Burning Outfit

ELECTRIC—☐ Motor-Generator Arc-Welder; ☐ Transformer-Type Arc-Welder
(Please state ampere-size of welder used .....Amperes)

What kind of welding-rod (or electrodes) do you use mostly? (Please list three, in order of their importance.)

1 ..... 2 ..... 3 .....
(Please state types of rods, such as bronze, cast-iron, steel, aluminum, etc.)

Please list the various types of work (both repair and construction) that you are at present doing with either (or both) types of welding, such as "Repair cracked blocks", "Repair bumpers", etc.

Acetylene Welding .....
.....
.....

Electric Welding .....
.....
.....

Which type of welding equipment would you prefer, for general, all-around use? (Please check ONE)
☐ Acetylene Welding Equipment; ☐ Electric Welding Equipment.

Please state briefly, the reasons for your above preference, any advantages offered, disadvantages of either type, and other helpful suggestions .....
.....
.....

Have you done any hard-facing of wearing parts?..... If so, with what results? .....

Do you reclaim worn parts by building-up with bronze?.... If so, how do you apply it? ☐ Acetylene; ☐ Electric

What is your source of supply on welding equipment? (Electric-Welders, Blowpipes, Rods, Electrodes, etc.)
☐ Manufacturer; ☐ Factory Branch or Distributor; ☐ Automotive Jobber.

What is your source of supply on welding gases? (Oxygen, acetylene, etc.)
☐ Manufacturer: ☐ Factory Branch or Distributor; ☐ Automotive Jobber.

How many vehicles in your fleet? (Please indicate below)
Trucks ..... Tractors ..... Trailers ..... Pass. Cars..... Buses..... Miscellaneous.....

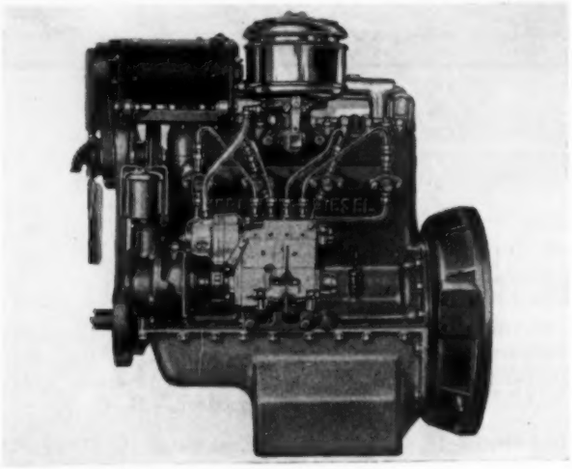
***Note:** If you cooperate with us and fill out this questionnaire, you will be entitled to a tabulated report covering all of the answers.*

Swap your transportation experience with other fleet operators in this easy, convenient way. We do the work. You get the benefit.

Name of Firm .....
Address .....
City and State .....
Your Name .....*Position*.....

Hercules Announces 4-Cylinder Diesel Series

HERCULES Motor Corporation has announced a new series "DOO" four-cylinder Diesel engines, developed for use in commercial vehicles of smaller sizes as well as for industrial, agricultural, oil-field and marine applications.



Three models of the new series have been produced. The smallest, the "DOOB" has a bore of 3¾" and a stroke of 4½" with piston displacement of 198.8 cu. in. The "DOOC" has a bore of 4" and a 4½" stroke with 226.2 cu. in. displacement. The "DOOD" has a 4¼" bore and 4½" stroke with a 255 cu. in. displacement.

The "DOOB" is rated at 62 H.P. and the "DOOC" at 70 H.P. at an engine speed of 2600 R.P.M. At 1600 R.P.M. the "DOOD" develops 56.5 HP.

Engines of the new series are interchangeable from an installation standpoint with the Hercules "OO" series of gasoline engines, allowing manufacturers to supply either gasoline or Diesel engines in their equipment without any mounting complications. In general design the "DOO" series follows the principles employed in the larger model engines. The patented auxiliary combustion chamber is featured. This chamber is located at the side of the cylinder bore. The "throat" which connects the cylinder with the chamber is so designed that the piston, on its approach to top center on the compression stroke, gradually reduces the throat area, thus automatically increasing the velocity of air entering this chamber at the time fuel is injected.

The crankshaft is supported by five bearings in a crankcase which is cast integral with the cylinders. The crankcase also supports the four-bearing camshaft. Aluminum alloy pistons are used. Connecting rods are of heat-treated nickel chrome molybdenum steel, rifle drilled. Lubrication is forced feed, supplied by geared pump, to all main, connecting-rod, piston-pin bearings, and to the gear train, as well as the over-head valve mechanism. Splash or throw-off from the connecting rods lubricate the cylinder walls. An oil filter is furnished.

A plunger type fuel pump is used, built with a vacuum-type governor as an integral part of the pump, and it is mounted on the same side of the engine as the fuel injectors, intake manifold, air cleaners and generator. On the exhaust manifold side are mounted the lubricating oil filter, water pump, and starting motor.

The series of Hercules "DOO" Diesels is available in power unit form, either fully enclosed or in the open type of assembly. For further details address Hercules Motors Corporation, Canton, Ohio. . . . Mention of FLEET OWNER is always appreciated.

●

Oil-Industry Trucks Have Low Accident-Record

ACCIDENTS involving motor vehicles operated by the petroleum industry are one-third less than the general accident rate of commercial vehicles, according to a report of the Department of Accident-Prevention of the American Petroleum Institute.

Records of 78 oil companies operating 42,554 vehicles during 1936, show that these vehicles traveled a total of 676,617,693 miles during the year with an accident rate of only 1.62 accidents for each 100,000 miles of travel. That compares with 2.32 accidents per 100,000 miles of travel for commercial vehicles whose experience was reported to the National Safety Council for the year ending July 1, 1937, covering 898,526,000 miles of travel.

The summary indicates that the frequency of motor vehicle accidents in the petroleum industry during 1936 showed a slight decline as compared with 1935, whereas according to reports of the National Safety Council, motor vehicle accidents for the nation as a whole increased sharply.

Accidents shown in the Institute's statistics take in all types, including minor accidents, such as scratched or dented fenders.

●

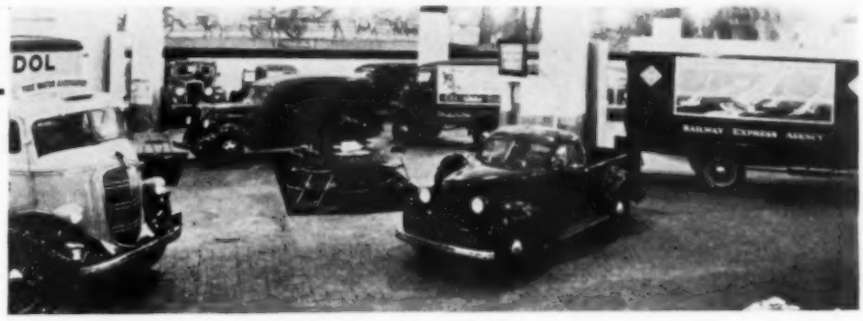
A Distinguished-Looking Moving Van

RECENTLY purchased by Cohen and Powell, Inc., of New Haven, Conn., specialists in high-class moving jobs throughout the eastern states, is this modern and efficiently equipped Mack model EH moving van.

Particularly well-adapted to moving furniture is the body which is 19′ long on the outside and 7′3″ wide by 7′2″ high on the inside. Of wood construction with aluminum panels on the outside, the body is covered on the inside with a special padding to prevent rubbing.

The interior is so planned that no damage can occur and it is free from any construction that might mar the contents which are being hauled.

This unit is used on high-class moving jobs, such as removing furniture from students' rooms at Yale University during the summer months, for example. Demonstrating the efficiency of Cohen and Powell truck equipment is the fact that during 1937, 38 offices of the Southern New England Telephone Company were moved by them in the astounding time of eleven hours.

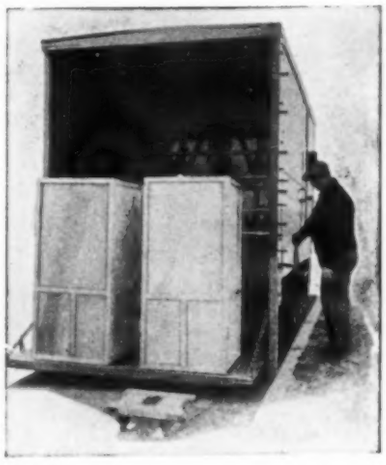


Scene from Truck Show Newark, N. J.

NEW PRODUCTS for FLEETS

"La-Tro" Elevator Tail-Gate

TO prevent accidents to men while loading or unloading trucks, to speed up these operations and reduce damage to merchandise, are the purposes of a power elevator tail-gate, introduced to truck owners under the trade name "La-Tro," by Lang Industries, Inc., 90 West St., New York, N. Y.



It is built into the frame of the truck when the new truck body is constructed or can easily be installed in an old chassis, a unit entirely separate from the truck motor, chassis, or body of the truck, although power for raising or lowering the tail-gate is taken from the truck motor.

Easy to operate, movement of the control-lever one way or the other raises or lowers the tail-gate to any desired position from the top of the street or platform level, this control-lever being located at any convenient point on the truck body. When lowered, a positive mechanical lock holds the tail-gate and prevents sagging. No other loading appliances are necessary for successful operation of the "La-Tro" Power Elevator Tail-Gate. It can be stopped or started at any point, and the speed regulated by increasing or decreasing the speed of the truck motor.

It is simply constructed—no pipe lines, no valves, no fluid, no mechanism to clog—and no close clearances. U. S. and foreign patents have been allowed, with other patents pending. For further details address Lang Industries, Inc., 90 West Street, New York, N. Y. . . . Mention of FLEET OWNER always helps.

•

Spray-Gun Adapter

THIS new spray-gun adapter makes it possible to use the paint cans themselves as spray cups. It is called the Cunningham-O-K Spray Gun Adapter and will fit any of the popular standard paint-guns on the market, the makers claim.

The use of this adapter is restricted to the patented pouring-quart cans which are the regular containers for Opex and Kem automotive finishes, made by Sherwin-Williams Company.

This adapter is furnished free, together with a combination stirring-paddle and can-opener, and an extra quart pouring can, when a small Sherwin-Williams assortment is purchased. For fleet operators, satisfactory deals can be made, specifving only the colors regularly used, we understand.

For complete details and further information address The Sherwin-Williams Company, Cleveland, Ohio. . . . We always appreciate it when you mention FLEET OWNER.

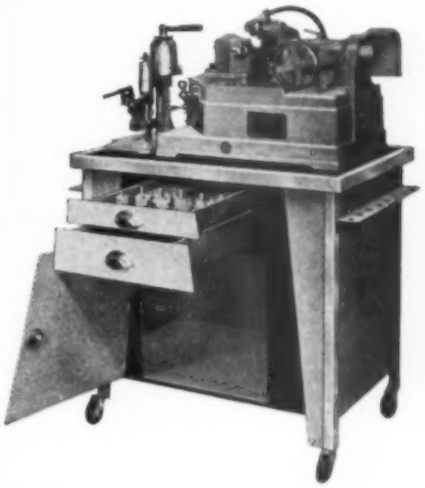
•

Hall "Valve Shop"

HALL announces a complete "Valve Shop" with which it is possible to perform complete service on all types of valves and seats in all types of trucks, buses, cars, engines, etc.

The cabinet is of heavy welded sheet steel, finished in red and blue, 33½ inches high; the top is 35 x 22 inches. Two drawers are provided for grinding wheels, pilots, gauges and tools. The lower compartment provides ample room for electric drills, tools and other equipment.

The refacer shown is the Hall No. 60, powered with two motors with rheostat-controlled variable speed, micrometer adjustment, built-in light and a wide variety of attachments for grinding rocker-arms, valve stems, etc. This refacer is of the wet type. The valve seat grinder shown is the Hall Eccentric Grinder, so well known that it requires no description here.



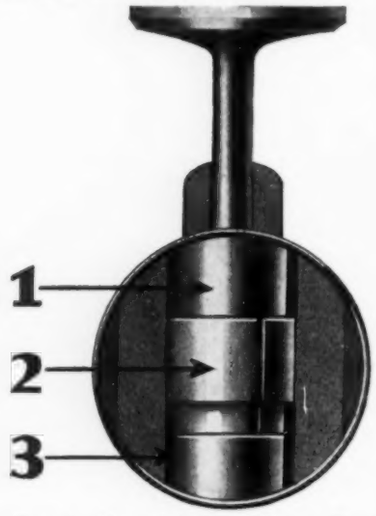
The makers state that cabinet may be bought as a separate unit, with or without equipment. . . . For further information address Hall Manufacturing Co., 1620 Woodland Ave., Toledo, Ohio. . . . Mention of FLEET OWNER always helps.

Hastings "Valv-Ring"

CLAIMED to be a permanent repair for worn valve guides, the Hastings "Valv-Ring" utilizes piston ring principles to stop oil and air loss around worn valve guides.

Valv-Ring is a miniature piston ring that fits right on the valve stem and seals air and oil just like a piston ring in a cylinder. The valve acts as the piston, the Valv-Ring as a piston ring and the guide as the cylinder.

This device has no springs or packing and is easily installed with the aid of a simple grooving tool. A few sizes will take care of all passenger-car and truck motors.



For further details address Hastings Manufacturing Co., Hastings, Mich. . . . Mention of FLEET OWNER always helps; sometimes it speeds up the service.

•

Free Engine Bearing Book

CLAIMED to be the most comprehensive and practical book of its kind ever produced is the new *"Engine Bearing Service Manual"* being offered free of cost to fleet men by the Federal-Mogul Corp., Detroit, Mich.

With the problems of bearing service looming larger in the service man's routine, this book is particularly valuable at this time. Written by Albert B. Willi, chief engineer of the company, it covers the entire subject thoroughly and in non-technical language, and is profusely illustrated throughout its entire 32 pages. It discusses the various engine troubles caused wholly or in part by defective engine bearings, such as oil-pumping (a major defect), missing, knocking, spark-knock, pre-ignition, smoky exhaust, burned valves, low gas-mileage, sluggishness, nauseating fumes, etc.

However, the manual does not try to promote the sale of replacement bearings by offering them as a cure-all for a multitude of engine troubles. It is a serious discussion of the subject, and describes related operations necessary to check the cause of defects, such as electrical and carburetion system examination. Various conditions of main, connecting rod and camshaft bearings which result in defective performance are discussed, and sure, simple methods of analyzing the cause of bearing failure are shown. Each type of automotive engine is covered, and the many types of bearings used are discussed. Lubricating systems are described and illustrated, and their troubles and correction detailed on several pages.

An example of the completeness of the manual is the table of "Crankshaft Dimensions of Popular Engines" —information which is frequently needed, is seldom at hand and frequently is not exactly accurate when obtained. The newer designs of engine bearings and the new bearing alloys developed for modern, high-speed engines are covered. One page gives useful connecting rod suggestions, and the book also illustrates and describes the new bearing oil-leak detector, the out-of-round gauge for testing connecting rod bores, and the new camshaft bearing replacement tool. At the back is a convenient table of inch measurements and their decimal equivalents.

Altogether, the new "Engine Bearing Service Manual" is prepared for the practical service man, to help him in his daily work, and it forms interesting reading for any mechanic or engineer.

While the present edition lasts, a free copy will be sent to any fleet man requesting it. It can be obtained promptly by addressing the Federal-Mogul Corp., 4809 John R Street, Detroit, Michigan. . . . Mention of FLEET OWNER will identify your inquiry and speed up the service.

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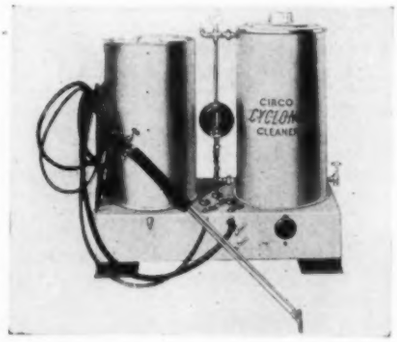
Circo Cyclone Cleaner

THIS cleaning outfit has been developed especially for cleaning automobile, truck and bus motors, either in or out of the chassis; for cleaning of undercarriage; and for stripping paints, road-oils, caked grease, etc. It is called "Circo Cyclone".

The cleaning vapor is produced in a gas-fired generator, any type of gas being used. The vapor passes through the nozzle of the cleaning gun at high velocity, and in so doing, syphons the cleaning solution from the tank, heating, vaporizing and spraying it on the work being cleaned.

Finger-tip control at the gun regulates the flow of cleaning vapor, as well as the supply of hot water and cleaning solution, making the cleaner automatic. Shutting off the gun automatically turns off the main gas burner, allowing only the pilot to burn, thus keeping the generator ready for duty.



The Cyclone is designed to meet requirements of the usual fire-prevention codes. Because the cleaning solution is not passed through the coils, any type of concentrated cleaning compounds or solvents can be used with it. The cleaner is as portable as its water supply, 25 feet of hose being provided.

Fleet operators may get further information, without obligation, by writing to Circo Products Company, 3088 W. 106th St., Cleveland, Ohio. . . . Mention of FLEET OWNER is always appreciated.

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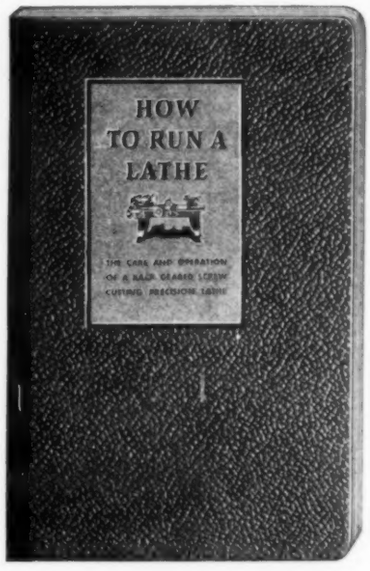
"How To Run a Lathe"

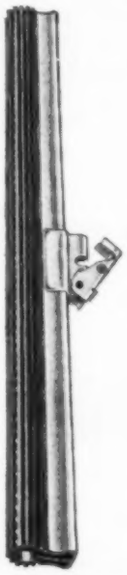


THE 33rd edition of the well-known machinists' manual, *"How to Run a Lathe,"* has recently been announced by The South Bend Lathe Works, South Bend, Indiana. The new edition of *"How to Run a Lathe"* has 160 pages containing late and authoritative information about the fundamental operations of modern lathe practice. Instructions on every phase of lathe work are given in detail, accompanied with more than 300 illustrations.

The book is intended as a handy reference for all engaged in metal-working operations. Besides dealing with all types of lathe work and showing the proper set-up for doing every kind of a lathe job, the book also includes a great amount of useful shop information of a general nature, such as: reference tables and formulae; tables of cutting speeds of metals; application of lathe tools; cutting screw threads; metric screw threads; taper turning and boring; milling and keyway cutting; bushing work; gear cutting; proper application and types of drives; shop hints and short cuts; etc.

Copies are priced at 25c. each, and will be mailed postpaid anywhere in the world. Stamps or coin of any country are accepted. A copy may be obtained by writing to the South Bend Lathe Works, South Bend. Indiana. . . . Mention of FLEET OWNER is always appreciated.

"Balloon" Blades



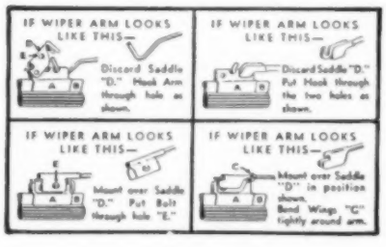
A NEW friction-type fastener for the Rex - Hide "Balloon" Perforated Windshield Wiper Blades, has recently been announced by Rex-Hide, Inc., East Brady, Pa. One of the blades is shown here, with the new type of fastener attached.

Named the "Jiffy-clip" because of its easy adjustability to all types of wiper arms, this new stainless steel clip will be standard equipment on all blades leaving the Rex-Hide factory in the future.

The principal advantage of the "Jiffy-clip", according to the makers, is that while it locks the blade securely to the wiper arm, a perfectly free hinge action is obtained, permitting the wiping ribs of the blade to hug the glass, for a better wiping job. The accompanying diagram shows how the fastener works on various types of windshield wiper arms.

The blade itself is of "balloon" or hollow construction, with a series of ten wiping edges and also a line of perforations running the length of the blade. As the blade sweeps across the glass, the flexing action of the soft rubber ribs creates alternate areas of pressure and vacuum. The moisture is drawn into the hollow tube, through the perforations, constantly cleaning the wiping ribs.

For sleet removal and ice prevention, a pipe-cleaner dipped in glycerine and hung inside of the wiper tube, is claimed to keep a windshield defrosted for several hours.


IF WIPER ARM LOOKS LIKE THIS—
Discard Saddle "D." Hook Arm through hole as shown.
IF WIPER ARM LOOKS LIKE THIS—
Discard Saddle "D." Put Hook through the two holes as shown.
IF WIPER ARM LOOKS LIKE THIS—
Mount over Saddle "D." Put Bolt through hole "E."
IF WIPER ARM LOOKS LIKE THIS—
Mount over Saddle "D" in position shown. Bend Wings "C" tightly around arm.

Further details will be sent on request. Write to Rex-Hide, Inc., East Brady, Pa. . . . Mention of FLEET OWNER is always appreciated.

•

Acid Neutralizing Described

AN attractive folder describing the corrosive action of acid and water carried by fuel oil and its effect upon Diesel engines has recently been issued by the Cunningham Company, makers of Cunningham Fuel Dehydrators.

The booklet points out a way to neutralize the acid and dry out the moisture through an entirely new process developed during recent years. It also cites the startling results obtained by Diesel engine owners who have been able to stop the corrosion of pumps, injectors, and cylinder walls with the Cunningham Fuel Dehydrator.

Copies of the booklet may be had by writing direct to the Cunningham Company at 4252 Santa Monica Blvd., Los Angeles, Calif. . . . Mention of FLEET OWNER always helps.

•

Truck Tires for ½-¾-Tonners

A NEW line of heavy-duty commercial truck tires and tubes designed especially for light trucks of ½- and ¾-ton carrying capacity is now being manufactured and sold through its nation-wide organization by The B. F. Goodrich Company,

Akron, Ohio. The new tires are recommended by the maker for both original equipment and replacement purposes.

The new line is manufactured in a complete range of sizes to fit present equipment rims in 16-inch wheel diameters. These sizes are 6.00-16; 6.50-16; 7.00-16; and 7.50-16. All are made with six plies, while the last is also made with eight plies.

The new tire follows the development by Goodrich in recent years, of the "Commercial 15" and the "Store Door Silvertown" tires, also specially designed to fit specific services in the light truck field.

For use with the 7.00 and 7.50 sizes the company has developed a new all-black tube equipped with hand-bendable rubber valves. This special tube was designed especially for speed conditions encountered in the light truck field. For the 6.00 and 7.50 sizes the manufacturer will use the Gold and Black tube, with hand-bendable rubber valves, which has had such wide acceptance in the passenger car field.

According to the Goodrich announcement of the new product, 39 out of every 100 trucks sold are of the "Commercial" type designed to carry loads of one ton or less. Up to the present time, most of these vehicles engaged in a wide variety of carrying services have been equipped with regular passenger-car tires, unless "changed over" or equipped with truck tires of special sizes.

This new tire is the answer to a popular demand for "truck tires for truck service" even on ½-¾ ton trucks where formerly passenger-car tires were usually the only type available.

The new line of Goodrich tires, the manufacturer says, allow light trucks to be operated without speed restrictions other than those imposed by law and the rules of safe driving. Other advantages of the new products, as compared to tires previously used for ½- and ¾-ton trucks are listed by the manufacturer as: Tread 22 per cent wider; tire 11 per cent heavier; more rubber; more traction; less skid; more safety; more mileage; fits present equipment rims; no wheel changes; greater resistance to bruise breaks. . . . For further details address B. F. Goodrich Company, Akron, Ohio. . . . We always appreciate it when you mention FLEET OWNER.

•

Firestone Rubber Cushions

A NEW product, Latex Whip Sponge Rubber Cushions, is announced by The Firestone Tire & Rubber Company, Akron, Ohio. An added feature is fire-proofing.

The Latex Whip cushions are constructed with millions of tiny interconnected air cells, of buoyant sponge rubber, thus providing an easy "breathing" action and making them soft.

The photograph shows the new product as applied to a bus seat. It is understood that seats for trucks and other applications are also under way.

The fire-proofing process, claimed to be new in this field, is a special one which renders the surface of the cushion impervious to accidental ignition of any kind.

For further details as to how this material may be applied to seats, back-rests, cushions, mattresses, armrests, etc., write to The Firestone Tire & Rubber Co., Akron, Ohio. . . . Mention of FLEET OWNER always helps.

New Combustion Indicator

TO facilitate quick checking of carburetors for rich, idle, average or lean mixtures and also acceleration-pump discharge, a new tester, called the "Mixture Master" has been developed.

According to the makers, it will make a mixture test in three minutes, eliminating all guess-work from carburetor adjustment.

The meter has a three-colored dial, calibrated in large, easy-reading type, showing the following: Air-Fuel Ratio; Combustion Efficiency; Lean; Rich; Average; and Idling ranges. It operates from self-contained batteries and is furnished with 12-foot rubber sampling hose, tail-pipe connection and operating instructions.

The machine weighs 6¼ pounds and is entirely portable—no outside connections or wiring are required. For further details address Electro Products Company, 621 E. 216th St., New York, N. Y. . . . Mention of FLEET OWNER is always appreciated.

•

New Body Insulation

A NEW type of insulating blanket of fibrous glass for refrigerated truck bodies is now available, according to a recent announcement of the Armstrong Cork Products Company of Lancaster, Pennsylvania. The product consists of stitched blankets of Armstrong-Corning Wool, made by the Corning Glass Works, Corning, New York, and sold by Armstrong.

This insulation in blanket form can be obtained in thicknesses from three quarters of an inch to five inches, and in sizes up to nine feet by fifty feet, or longer if required. It may be faced on one or both sides with Sisalkraft, muslin, flameproof muslin, or any specified material. In addition to the blankets, this insulation is available in plain bats, rolls, and other usable forms.

Some of the advantages claimed for Armstrong-Corning Wool Insulation are: Exceptionally high insulating efficiency; felting properties that permit its being quilted even without facings; light weight; resilient fibres that cause it to expand instead of settling under vibration; freedom from the absorption of moisture or fumes; and its low cost.

Armstrong-Corning Wool is an inorganic material which is fireproof and acid-resistant, and does not deteriorate, according to the makers. . . . For further details address Armstrong Cork Products Corporation, Lancaster, Pa. . . . Mention of FLEET OWNER is always appreciated.

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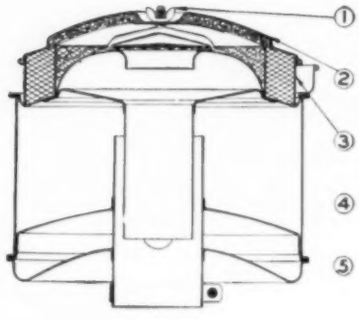
Removable-Element Cleaners



1. Remove wing nut
2. Lift off cover plate
3. Remove and discard dirty element
4. Insert new element
5. Re-assemble cover plate and wing nut

PREVIOUSLY, the AC air cleaners were so designed that the entire assembly had to be removed for cleaning and re-oiling. This discouraged proper attention to the air-cleaner, in many cases.

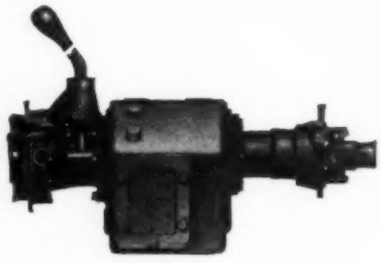
A new design, illustrated here, is more accessible; the old filtering element may be removed and discarded, and a new one inserted at a cost no greater than that for servicing the previous types, it is claimed.

This copper-mesh, replaceable filtering element is "tailored" to fit each engine on which it is installed. The amount of material used is meticuously weighed and correctly calibrated, so that when properly installed in its own filter housing, efficient air-cleaning will result.

It is recommended by the maker that "cartridges" should be changed every 2,500 miles under normal driving conditions; and oftener in extremely dusty territories. . . . For further details regarding these new air-cleaners address A. C. Spark Plug Company, Flint, Mich. . . . You'll mention FLEET OWNER, won't you?

•

Watson Auxiliary Transmissions



WHERE are we hauling and how heavy is our load? If this question was closely analyzed by truck operators there would be less confusion regarding the proper powering of trucks. The mere addition of some type of "helper" equipment does not necessarily mean a correction or solution of a particular hauling problem.

Basically, most hauling operations can be divided into three classifications: light loads at fast speeds; heavy loads, at slow speeds; and the intermediate requirement of both power and speed for varying types of loads.

Operators in the first of these groups find that standard transmissions are entirely satisfactory for a majority of loads. On many occasions, however, faster road time at low engine speeds would contribute a material saving in time and engine wear.

In the second classification, operators have found it increasingly difficult to obtain from standard transmissions a "split" or selection of gear ratios, particularly in the lower speed brackets, that meets every requirement.

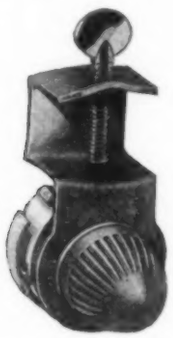
The third, or intermediate group, need both extreme power and high speed. In order to get both, the installation of an auxiliary transmission is essential.

The H. S. Watson Co. of San Francisco have developed a series of 7 auxiliary transmissions known as the Watson-Brown-Lipe Auxiliary Transmissions that are claimed to cover every requirement of modern trucking. One model provides overdrive and direct, another affords underdrive and direct and there are five models providing overdrive, direct and underdrive with a total of 12 speeds forward and 3 reverse.

A complete analysis of power requirements for particular trucking needs may be had by writing the H. S. Watson Co., 1145 Harrison St., San Francisco. Literature on the complete line of auxiliary transmissions may also be had. . . . It is always appreciated when you mention FLEET OWNER.

Casco Heater Switches

SWITCHES for the operation of hot-water heaters are offered by Casco Products Corporation, Bridgeport, Conn. These are of the illuminated rheostat type, the illumination being a constant reminder not to leave the



vehicle with the heater motor running.

A wide selection as to style and price is offered. The bracket is universal—it will clamp on, or can be mounted through the dash. Prices range from 40c to 80c each.

Features pointed out by the maker include: Bayonet-type bulb and socket; ventilated sides for cooling resistance-unit; terminals properly spaced to prevent shorts; only one moving part, which is made of phosphor bronze; resistance-unit securely nested; friction-lift knob easily removed for changing bulb; positive stop in "on" and "off" position; no resistance in the line at full speed.

For further details address Casco Products Corporation, Bridgeport, Conn. . . . We always appreciate it when you mention FLEET OWNER.

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Magnus Announces "Sludgex"

A NEW penetrating solvent called "Sludgex" is announced by Magnus Chemical Co., Garwood, N. J. It is claimed to rapidly and thoroughly remove sludge and carbonized oil from the "innards" of any engine.

Treatment suggested by the maker consists in warming up the motor, stopping, draining all oil, replacing plug and adding a quantity of Sludgex one-third in excess of the normal oil capacity. The motor is then idled for 3 to 4 hours at low speed and the Sludgex then withdrawn, the thin liquid previously introduced coming out as a thick, foul sludge. The motor is then rinsed out by running a few minutes with flushing oil or light motor oil, draining, and refilling with new oil for service.

Magnus engineers claim that this process will remove all sludge from the interior of a motor, oil-pan, oil-lines, screens, pumps, etc. They suggest that it be done every 20,000 miles as a preventive maintenance measure.

Sludgex is a clear brown liquid of low viscosity, non-corrosive to metals and non-injurious to gaskets, packings, etc., according to the makers. It may also be used for the external cleaning of motors, parts, etc., especially in a *cold* immersion tank. It is said to not only clean off oil, grease and dirt, but also to remove lacquer, carbon, soot, grease, paints and similar coatings. For parts cleaning a 1-to-3 part water emulsion is recommended.

Sludgex is packed in 50-gallon and 15-gallon drums and 5-gallon cans. For further details, prices, etc., address Magnus Chemical Company, 36 South Ave., Garwood, N. J. . . . Mention of FLEET OWNER will please us greatly.

•

Seven New Regroovers

A HEATING-ELEMENT built in the cutting head, new blade sizes, and air-cooled handles, are features of the "Craftsman" line of tire regrooving tools offered by Kwick-Kut Mfg. Co., Inc., St. Louis, Mo. The new line includes seven models.

In addition to their many new features, the Craftsman line embodies all qualities that have made Kwick-Kut popular throughout the fleet trade.

Cutting-heads are of universal bronze, cords are of finest rubber, and high quality materials are used throughout, it is declared.

Because of their construction, Craftsman tools are being offered with a two-year guarantee, which includes the heating-element.

A complete manual explaining various methods of grooving different patterns will be sent upon request. . . . For your free copy address Kwick-Kut Mfg. Co., Inc., 3821 Arsenal St., St. Louis, Mo. . . . Mention of FLEET OWNER is always appreciated.

•

"Du-Al" Hose for Painting

A NEW development in spray-painting hose is announced by Eclipse Air Brush Company, Inc., Newark, N. J., with the introduction of "du-al" hose.

This new hose combines air and fluid hose into one unit, the tubes being united by a web of solid rubber which is moulded in one piece with the outer casing of the hose. The combination is as flexible in use as a single line, and handles as easily, it is claimed, eliminating the annoyance and waste of time occasioned by separate hoses becoming tangled and snagged.

The new hose is of special, reinforced construction, combining features of both wrapped and braided hose through an arrangement of braids with an intermediate wrapping of high tensile cords. The inner tube is compounded to resist the chemical action of paints, lacquers, etc., and the outer sheath to resist chemicals as well as abrasive wear.

For making standard connections, enough of the web is removed to spread the hose to the required outlets, further splitting being prevented by a tightly fitting collar. The new "du-al" hose is available with $\frac{3}{8}$" fluid passage and $\frac{1}{4}$" air passage. . . . For further details write to Eclipse Air Brush Company, Newark, N. J., mentioning FLEET OWNER, if you please.

•

New Sterling Sander

A NEW model of the Sterling Pneumatic "Speed-Bloc" Sander is announced, in which the air motor is made of cast aluminum instead of iron, reducing the weight about 25 per cent.

The "floating" principle of the sander provides flexibility for sanding curved as well as flat surfaces. For wet sanding a water connection is provided, permitting the direction of a fine spray of water to the surface being sanded. From one to five sheets of abrasive paper may be attached to the pad at one loading; standard size sheets will cut into three pieces without waste.

In operation the pad oscillates back and forth, $\frac{5}{8}$-inch each complete stroke. Flexible rollers are imposed between air-motor and sanding pad, thus providing the necessary flexibility. A rubber block, with felt pad, adapts the surface to varying contours. This machine operates efficiently on 45 to 60 pounds of air pressure, using approximately 5 to 6 cu. ft. of air per minute under load.

For interesting booklet, prices and fleet discounts address Sterling Products Company, 2457 Woodward Ave., Detroit, Mich. . . . If you mention FLEET OWNER when writing, we'll feel very grateful.

New Fruehauf Trailers

(*Continued from page* 48)

ings are of the moulded type; a new, 360° ball bearing-mounted slack adjuster, simplifies and speeds up adjustment.

A new, improved trailer body, illustrated at the head of this article, said to offer custom-built features at low price, is also announced by the Fruehauf Trailer Company at this time.

The new body, known as the "F" type, incorporates several features, such as all-metal, rust-resistant roof; die-formed front scroll and rear-header; and special high-grade steel panels. The roof actually reflects more of the sun's rays than a canvas type, protecting the load from excessive heat, it is claimed.

A special layer of plywood behind the panels not only helps eliminate waves in panels, and prevents rumbling, but the space between this interlining and the regular plywood lining of the body, affords a degree of insulation that means added protection for the merchandise.

Increased ease and economy of servicing is an important feature of this new "F" body. In case of accident, only the affected parts need be replaced. "Snap-on" moldings are used throughout, so that any panel may be removed without disturbing another. Uprights can be taken out from inside of the body without interfering with the panels.

Fruehauf Trailer Company, Detroit, Mich., will be pleased to send you full details of their new trailers, without obligation. . . . When writing for same, we'd appreciate it if you mention this announcement in FLEET OWNER.

●

New GMC Light-Duty Jobs

(*Continued from page* 51)

A notable improvement which concerns all models is the use of double-wall, coppered-steel tubing for hydraulic brake lines. According to GMC engineers this type of tubing is not only stronger and safer, but prevents scale formation which might score brake cylinders and pistons.

Improved all-steel "helmet-top" cabs are offered for light, medium and heavy-duty models in both the conventional and cab-over-engine lines. Changes in the all-steel cabs for trucks from ½-ton to 1½- to 2-ton capacity include seat back cushion and lazy-back slope modified to provide a more form fitting seat; new cushion spring construction; improved rubberized trim material, and chrome windshield frame.

GMC continues its virtually 100 per cent steel cab design for medium and heavy-duty units with improvements in appearance and driver comfort. The 1938 instrument panel with dual tone finish introduces a modern design trend. Another feature of these cabs is the provision for a complete line of accessories, such as radio, heater, defroster, electric clock, etc. The new GMC trucks provide at no extra cost all of the factory-installed wiring and outlets necessary for the convenient installation of every accessory commonly placed on passenger cars.

Major improvements in the cab-over-engine models are directed largely at factors that concern driver-comfort and steering. Cab-over-engine steering wheels now have the same relative position in respect to the driver as in conventional models. The driver's seat has been tilted for more comfort and better vision.

The steering mechanism has been improved with a new steering gear. The front spring shackling has been reversed from last year's practice, to provide better steering geometry. A change in the accelerator pedal and gear-shift levers provide easier operation.

Mechanical features of the GMC line of cab-over-engine trucks have been retained with conventional relation of power plant to other major chassis units, forward placement of front axles, rear-opening cab doors, and quick accessibility to engine through cowl panel doors, removable engine-cover and floor-boards. Wheelbases range from 108 inches to 196 inches, providing load spaces for bodies from 8 feet up to 22 feet in length.

In addition to the 1938 series of trucks, the GMC line also includes a complete group of semi-trailers featuring a rubber-mounted interchangeable fifth wheel; a heavy-duty pressed steel frame reinforced with an inserted pressed steel channel at the drop section; a heavy-duty truck type suspension designed and built along the same lines as used in GMC heavy duty trucks; rubber-bushed, shock-proof radius rods as standard, which require no lubrication; and one-piece tubular axles. Other features are power-operated constant throw cam-type brakes with cast alloy drums; improved supports with cast legs and support-wheels and fully-enclosed lifting mechanism.

In addition to the trailer chasses, GMC offers a complete line of trailer van bodies greatly improved in construction and appearance for 1938. The group also includes the new Trailabout, a two-wheel trailer of 1,000 pounds capacity which hitches either to passenger cars or trucks.

Conventional models have gained new styling through a front end treatment involving a name plate, radiator ornament and insignia plate of new design, in combination with new color background for the radiator grille, a further evolution of the "Dual-Tone" design that has been a distinguishing feature of the 1937 GMC trucks. In a new use of colors, changed appearance is achieved by using body color in the radiator grille background, instead of the moulding colors. This accentuates radiator and grille outlines while retaining all the features of the contrasting colors.

These changes, in combination with flowing stream lines and a choice of 11 Dual-Tone color designs, make GMC's 1938 products highly attractive from the standpoint of appearance. Improved all-steel "helmet-top" cabs are available for light, medium and heavy-duty models in both the conventional and cab-over-engine lines.

Introduction of the three new models is another step on the part of General Motors Truck and Coach Division towards building a line of trucks to fit every hauling need in the low tonnage field.

●

Dodge COE 3-Tonner

(*Continued from page* 53)

take-off opening is located on the right side of the transmission.

Rear axle housing is a single piece of welded square steel tubing. It has a road-clearance of 10¼ in. when 9.00/20 tires are used. The rear axle is full-floating and is offered in the gear ratios of 7.4, 6.8 and 6.166. Double-reduction axles with 8.4 ratio and two-speed axles with ratios of 6.14 and 8.35 also are available as extra, or optional equipment.

Large hydraulic brakes with stepped-bore cylinders are used, to insure safety and control of this unit at all times. Front brakes are 16 in. in diameter and the rear brakes are 17¼ in. in diameter. These are internal-expanding brakes and have a brake lining surface 29¼ in. long on each of the front wheels and 34¼ in. on the rear wheels. Width of the lining on the front wheels is 2½ in. and 4 in. on the rear. Total area of braking surface of the four wheels is 421.5 sq. inches.

The parking brake is located at the rear of the transmission and is of the external-contracting type. It has a cast iron brake drum, 9½ in. in diameter. The lining of the parking brake is 29½ in. long and 2½ in. wide, thus giving it a total area of 73.75 sq. inches of braking surface. Offered also on this model as production equipment is a booster-operated brake of the vacuum-suspended type.

Interior of the cab of this model is defined by the maker as being spacious, with plenty of room for the driver and his helper, who sit in single seats on either side of a well-

(*Please turn to page* 66)

140,000 PERSONS . . . men and women, die annually of cancer. Yet cancer, if discovered in time, can be cured . . . Purchase the label shown above, place it on your Christmas packages, and join one of the greatest crusades of our times: the fight against ignorance and fear of cancer. Help spread our message by doing your part . . . **FIGHT CANCER WITH KNOWLEDGE!**

---------- **MAIL THIS COUPON** ----------

NEW YORK CITY CANCER COMMITTEE, 165 East 91st Street, New York

For the $1 attached, send me 10 labels and 1 year's subscription to the Committee's new publication, "The Quarterly Review."

If a resident of New York State outside the City, write to:
New York State Cancer Committee,
Rochester, New York

If outside the State, write to:
American Society for the Control of Cancer, N.Y.

*Name*_____

*Address*_____

_____

THE NEW YORK CITY CANCER COMMITTEE

insulated engine cover that is situated in the center of the cab and tapers down toward the floor at the rear of the cab. A large steering wheel permits easy handling of this large unit and wide door windows and divided windshield allow for excellent all-around vision.

Doors of the cab are hinged at the front. Below the lower part of the door at the end of the front fender is a wide step, which permits easy access to the cab. At the highest point on the front fender, directly above the wheel, is another wide step which allows the driver to stand in such a position that he can look to the rear when backing up the truck.

For further details of this new Dodge cab-over-engine unit, and interesting literature which illustrates and describes it much better than we have done here, address Joseph D. Burke, c/o Dodge Truck Division, Chrysler Motors Corporation, Detroit, Mich. . . . Mention of FLEET OWNER is always appreciated.

●

Three Willys Trucks

(*Continued from page* 55)

tion, starting-motor and generator are standard equipment. Headlights are of the "eyeball" type, set in the fenders with parking lights, dimmers and headlights all contained in one unit.

A Borg & Beck clutch of the single-dry-plate type is used in this new job, with three-speed, silent-gear transmission. Other features include "pistol-grip" hand-brake lever; two glove-compartments—one on each side of the instrument panel. The panel itself has air-plane type instruments centered on it, and include engine heat indicator centered between and below the speedometer and the gauges—ammeter, oil-pressure and gasoline. Controls on the instrument panel include starter, choke and lights.

Steering gear of the new Willys trucks is made by Gemmer, and is of the worm-and-sector type. Brakes are Bendix, four-wheel type. Frame is of the XK type, 3¾ x 1¾ x 7/64 inches. Rear axle is of the truck type, semi-floating, having heavy double-ribbed housing, with spiral-bevel gears.

Special truck-type fenders are used, the maker states, with all-steel running-boards having diamond corrugations. Wheels are of the heavy-duty disc type, with four-inch rims.

Dimensions of the new Willys half-ton pick-up body (said to be standard specifications) are as follows: 72 inches long; 46½ inches wide and 16 inches high.

For interesting literature that illustrates and describes the complete line of Willys commercial models, address Willys-Overland Motors, Inc., Toledo, Ohio. . . . Mention of FLEET OWNER is always appreciated.

●

New Bantam Commercials

(*Continued from page* 56)

dry disc, 8½" diameter.

TRANSMISSION: Standard shift, synchro-mesh, silent-second type.

DRIVE: Hotchkiss type, single tubular propeller shaft from transmission to differential.

STEERING: Worm and ball-socket, shockproof, irreversible. Right or left hand. Fingertip control.

RADIATOR: Fin-and-tube type detachable core, 6-quart capacity.

FRONT AXLE: Drop-forged alloy steel, I-beam section.

REAR AXLE: Semi-floating, spiral-bevel type.

BRAKES: Four-wheel mechanical; equalized, conduit type.

SPRINGS: Special alloy steel. Front, transverse. Rear, semi-elliptic, parallel mounted.

SHOCK ABSORBERS: Improved friction-disc type, double-faced, adjustable.

FRAME: Inverted "U", pressed-steel channels. Heavy "V" and straight cross-members. Three-point suspension.

WHEELS: Pressed steel disc with chromium hubcaps. Slotted for chains.

TIRES: 5.00 x 15 high speed balloon.

GENERAL DIMENSIONS: Ground Clearance, 8". Wheelbase, 75". Tread —front, 40"; rear, 42". Weight, with average body and full equipment, 1200 lbs. Rating, one-quarter ton.

CABS, BODIES & EQUIPMENT: A full line of Bantam-built cabs and standard bodies is available. Special bodies built to order. Equipment furnished for all kinds of special service.

For further details, prices, etc., address A. C. Olander, c/o American Bantam Car Corp., Butler, Pa. . . . Mention of FLEET OWNER is always appreciated.

●

Two Cars and New Truck in 1938 Ford Line

TWO distinct Ford V-8 cars, differing in appearance, appointments and price, are presented for 1938. One is the de luxe Ford V-8, the other the standard Ford V-8.

The standard car is designed for owners to whom economy in first cost and operating cost is paramount. The de luxe car provides added luxury and style for those who desire them.

Both cars have the same V-8 chassis. The eight de luxe types are available only with the 85 horsepower V-8 engine, the three standard types with either the 85 horsepower or the 60 horsepower engine.

The de luxe car is a stylish sister of the standard. It is entirely new in appearance. The radiator grille is of new design. Appearance of the hood is longer and more sweeping. Fenders are massive. Interior appointments are in keeping with the styling of the exterior. Substantially more room in the closed sedans, greater passenger comfort and much larger luggage space are provided.

The standard V-8 cars reveal new styling, with a different radiator grille design, long hood and flowing contours. The spacious interiors are roomy and attractively upholstered and appointed.

In addition to the two passenger cars, Ford is to present an expanded line of V-8 trucks and commercial cars. Both are newly styled to lend added "eye appeal" in commercial transportation.

A new group of "one-tonner" trucks also is offered, in addition to the 112-inch commercial cars and the 134-inch and 157-inch wheelbase trucks.

The new "one-tonner" is designed specifically to bridge the gap between the commercial cars and the truck groups. Available with either 85 horsepower or 60 horsepower engine, it is expected to make the economies of the latter engine more widely available in commercial transportation.

Other advances for 1938 are the new 134-inch wheelbase trucks, replacing the 131½-inch wheelbase in the big truck line, a new frame width for the 134-inch and 157-inch wheelbase units, improved brakes and easier steering and stronger construction throughout. . . . Complete details will appear in the December issue of this publication.

●

Happy Birthday—Korbel & Colwell

OCTOBER 27th, opening date of the National Automobile Show in Grand Central Palace, New York, happened to be, by coincidence, the 25th anniversary of the formation of the partnership of Edward F. Korbel and Worth Colwell, counsellors in public relations and publicity, especially in the automotive industry. . . . For that number of consecutive years this combination of personalities has been in charge of publicity for Motordom's big annual event. . . . For almost an equal period of years they have handled the public relations work of the International Flower Show, Exposition of Chemical Industries, Power Exposition, Hotel Exposition, numerous sporting events and other enterprises, as well as specialized campaigns outside of the exposition field. . . . Korbel & Colwell, Inc., recently removed to the General Electric Building, 570 Lexington Ave., New York, N. Y. . . . Congratulations, Korbel & Colwell!

NO FOOLING!

THEY'RE NEW - - *and* FREE!

THE following numbered selections have been chosen by Editor Fischer as this month's trade literature offerings. . . . These booklets are GUARANTEED to be interesting and are offered NOT on the basis of producing inquiries for advertisers, but on THEIR OWN MERITS as handy reference data. . . . If you don't believe it, send for a few of them and prove it to yourself. Do not confuse this page with the voluminous conglomerations found in ordinary (the other fellows') magazines. . . . The post-card is for your convenience. No postage required.

383. STATE REGULATION BOOK. . . . When you wish to run your vehicles into other states, you don't have to consult a lawyer or a transportation expert—not if you have a copy of a brand-new and up-to-date booklet entitled *"Truck and Trailer Size and Weight Restrictions."* . . . This is a *real* handbook that covers every state in the Union. . . . To make it "official," each set of state laws is printed on a separate page, and is countersigned by the state motor vehicle official of each state. . . . The book is pocket-size, and without advertising. . . . Number 383 on our post-card brings a *free* copy promptly. No postage stamp is required.

•

384. DIESEL ENGINE BOOK. . . . Here's one of the most comprehensive books on the subject that we have ever seen. The title is *"Diesel Engines and Their Lubrication."* . . . Instead of being a puff for someone's engine, or someone's oil, this book is a well-illustrated textbook that every automotive man ought to read carefully. . . . It tries (in plain language) to give you the "low-down" on Diesel engines in *all* types of service, telling just what they are, how they work, what troubles to look for, mechanical problems, etc. . . . Number 384 on our post-card will bring you a copy, without obligation, by mail.

•

385. PAINT SPRAYING HINTS. . . . If you've experienced such pesky paint-gun problems as distorted patterns, spitting, split-sprays, etc., here's a new folder that illustrates and describes these conditions, telling exactly how to go about remedying them. . . . It also gives pointers on how to clean spray-guns, hints on pressure-regulators, hose, thinners, etc. . . . This is *not* a book—just an interesting folder. . . . Number 385 will bring you a free copy promptly. . . . The post-card is for your convenience.

•

386. IGNITION QUESTIONS AND ANSWERS. . . . Here's a handy little booklet that lists many popular electrical questions and gives the right answers. . . . Such things as, "Why test ignition first; rather than a vacuum-test?" . . . "Should spark plugs be cleaned before testing the motor?" . . . "Do most condensers leak after being used for a short time?" . . . The booklet also gives 15 "Things That Can Go Wrong" with the ignition system, and explains how one system of Motor Tune-Up should be accomplished. . . . Number 386 on our post-card will bring a *free* copy of this book, promptly . . . It's worth listing here, believe us.

•

387. BRAKE ADJUSTMENTS. . . . Don't let brake adjustments scare you, just because there happen to be a dozen or more different types of brake systems. . . . Here is a new folder that gives *simplified* adjustment procedure (illustrated) for such popular brakes as Bendix Mechanical, Bendix Hydraulic, Lockheed Hydraulic, Ford, Chevrolet, Steeldraulic, etc., etc. . . . This folder looks like it ought to be a very handy piece for your *"Brake"* file. . . . Include Number 387 on the post-card attached, and get a copy; free, gratis and for nothing.

•

388. STARTING DIESEL ENGINES. . . . Electric starting, of course, is the answer, for automotive work. . . . Here is a new book entitled *"Electric Starting of Diesels,"* which is also worthy of a place in your Diesel library. . . . The book is actually a description of the testing procedure and equipment developed by Exide engineers in applying electric starting to Diesel engines. . . . It also goes into the theory of the Diesel engine—how it has developed—its adaptability—the difference between its operation and that of a gasoline engine, etc. . . . Number 388 brings you a free copy promptly.

•

389. HOW TO MACHINE ALUMINUM. . . . Here is a handsomely-done, 32-page booklet entitled, *"Machining Aluminum."* . . . It also gives pointers on what kinds of drills, taps and dies to use for aluminum and tells exactly how the work should be done, for best results. . . . Machining on the lathe, filing and grinding are also discussed. . . . If your work includes any kind of cutting work on aluminum, the booklet should be a "God-send." . . . Then too, it's free! . . . Just include Number 389 on our post-card, if you want it.

•

390. PIPE REPAIR HANDBOOK. . . . Whether you're interested only in exhaust-pipes, steam-pipes, water-pipes or gas-pipes, you'll surely find this book of interest. . . . It illustrates and describes how permanent, *quick*, repairs can be made, especially with the use of clamps of a special type. . . . No tools are required except a wrench or a screw-driver. . . . Number 390 on our post-card will get you a free copy, by mail.

•

391. HOW TO USE WRENCHES. . . . That sounds sort of silly; the *real* title of the book is *"How to Select and Use Wrenches."* . . . If you think you know all that there is to know on this subject, perhaps you'll be fooled when you see a copy of this handy, pocket-sized booklet. . . . At any rate, everyone should "brush-up" on his knowledge once in a while. . . . We'll help you, by getting you a free copy of this booklet, if you want it. . . . Just indicate by placing Number 391 on our post-card.

•

392. CORROSION-INHIBITOR. . . . A fancy word, which only means "Rust Preventer" or something like that. . . . Now that anti-freeze time is here, it's important to check-up on your cooling systems. . . . This piece of literature describes a product which does *two* jobs at the same time—it CLEANS the cooling system, and it PREVENTS future corrosion, according to the makers. . . . Interesting folders, evidence of efficiency, and proof of use will be sent on request. . . . The request in this case simply consists of your placing Number 392 on our post-card.

•

393. FIRE PREVENTION. . . . The title of this booklet is *"Preventing Welding and Cutting Fires."* . . . It gives some sound advice and many hints on handling oxy-acetylene welding and cutting apparatus. . . . The book is sensibly illustrated, and it would be well for every fleet operator to send for a free copy and hand it over to his welding operator. . . . Number 393 on our post-card brings free copies—one or a dozen.

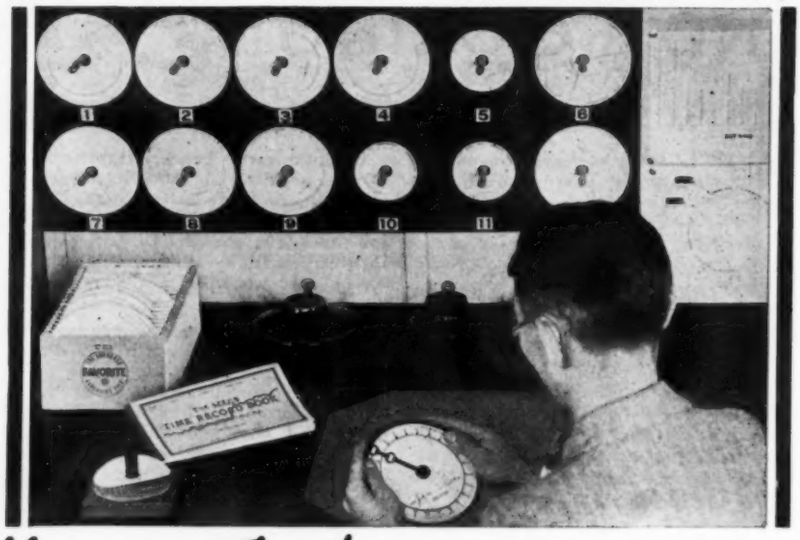
•

394. AIR-BRAKES FOR LIGHT TRUCKS. . . . Bendix-Westinghouse (and other manufacturers) now are making complete "packaged sets" of air-brake equipment, so that in a few hours' time, any of your good mechanics can equip your Fords, Chevrolets, Dodges, etc., with air-brakes—just like the big Macks, GMC's, Autocars, Whites, Internationals, etc., are using. . . . We have never mentioned this literature in this department previously—so here it is; just indicate that you'd like a free copy (showing how simple the thing is) by putting Number 394 on our post-card and mailing it. . . . No obligation.

PLEASE NOTE:

READERS are again reminded that this department is conducted strictly as an Editorial Feature. . . . It should not be confused with similar departments in other magazines, where attempts are made to tie-in literature with advertisements. . . . We don't do things that way.—H.C.F.

ALL THESE "TOOLS" WE FURNISH YOU



Managing Trucks on the Basis of **FACTS**

How do YOU manage your motor trucks?

You can, of course, do it by "rule of thumb" and get *some* kind of results. But if you will look over the records of successful truck operators you will find they are keeping close tab on all their expenses, but more and more they are giving attention to *those kinds* of expenses which reflect good or bad management.

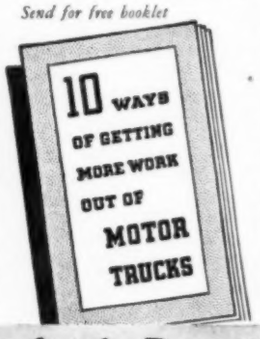
TIME Counts

It's not so much gas and oil which counts, or even the cost of tires, because on these items not much can be done by management; but time spent in the repair shop really means something, time spent loading, time spent delivering, average time per delivery, average speed, total running time per day, etc.—these are all factors which can be *changed* by Management.

These Things MUST Be

shown up before they will receive the proper attention. The *Servis Recorder,* by means of its chart, brings right to your desk every move the truck makes, for 1 day, 3 days or 7 days—showing up all running and idle time, all delays, speeding, overtime, etc.; it is an easy matter to transfer this information to your cost records by means of the "tools" shown above and thus get a *true* picture of your operating expense. *Write for our 40-page Time Record Book—it's free.*

Send for free booklet



THE SERVICE RECORDER CO.
1422 Euclid Ave., Cleveland, O.

The Servis Recorder
Tells Every Move Your Truck Makes

Backstage Maintenance

(*Continued from page* 22)

tion. There are a great many of types and kinds of drill-presses.

The usual complement of garage equipment is found in Warner Brothers' shops—too numerous to mention here, but including every important item of tools and equipment that is up-to-date and will save time and/or money. Cylinder re-boring machines, piston sizing equipment, connecting-rod aligners, motor stands, hydraulic jacks, electric drills are some of the important items.

Among the unusual items of maintenance performed in Klein's shops are the following: Rear-view mirrors are re-silvered when necessary. Tanners and leather workers are on call at all times, so that upholstery always looks brand new. In the jeweler's department adjoining the garage a skilled artisan is on hand to "doll up" the ornamental gadgets on all cars and trucks. Electroplaters have recently devised some short cuts in the operation of their department, hence this fleet is at all times maintained "new and shiny" as you see it in the accompanying photographs.

The Warner Brothers Studio uses about 1,000 to 1,500 gallons of gasoline per day. As to lubricating oils, these are bought in quantity lots (drums) and one or two of the very best well-known and advertised brands are preferred there.

When it comes to inspection and lubrication there is no red tape. Art Klein has a standing rule that all trucks must be thoroughly inspected and lubricated every 1,000 miles, regardless of how smoothly they have been running. When the speedometer approaches its next 1,000-mile mark the vehicle is turned over to the shop foreman. With his assistant, he takes it out on the road and tests it *loaded,* under actual service conditions.

Next the foreman and his mechanic make a list of recommendations on a printed form entitled "Repair Order." Any unusual requisitions for repairs or replacements are then checked by Art Klein, personally, with the foreman. When Art Klein is satisfied that the new parts or replacements are justified, the form is signed by him and the work put into the job at once.

By means of these periodic check-ups, in addition to normal running repairs to brakes, electrical equipment, etc., Art Klein's department has consistently "earned its keep" over a long period of years. That it pays to "modernize" is borne out by the visual proof. You can take the wheel of almost any of the vehicles in Warner Brothers' fleet (if they will let you) and you will find that it runs about as smoothly as the day it rolled off the assembly line, thanks to an intelligent system of maintenance supervision, carefully followed out. . . . Yes, they've *got* to be good in Hollywood!

•

Trailer Totes 101 Tons

(*Continued from page* 38)

mins HB-6 Diesel engine and drives through a Sterling dual chain-drive, four-wheel rear-end.

Of course, many special cautions were necessary in handling these heavy loads, because of their great height and weight. Of importance was the smooth power-flow from the Diesel engine and the many construction features of the tractor-trailer hook-up.

Belyea Truck Company is a large user of Diesel engines and have constructed a number of special heavy-duty tractor-trailer combinations around these engines, we are informed by our West-Coast correspondent.

•

Let There Be Light!

(*Continued from page* 26)

ciency. Fixed charges, as cost of installation and investment, continue whether the socket is empty or full.

Obviously the unobserved burn-out is doubly to be avoided because if the

unit appears ready for service and yet fails to function in an emergency or need, it represents a definite loss, sometimes an accident hazard. If an installation of a plurality of sockets can be found satisfactory when a considerable number of the lamps are burned out or removed, then the *prima facie* evidence is that the lighting plan was at fault.

Surplus dead sockets cost something as standby investments and one would conclude that the most economical installation should have been based upon the minimum number of sockets, but each lamped and doing its full share of duty.

"Pension" Aged Bulbs: We have previously remarked that aged lamps in a properly maintained system should be removed even though still capable of burning. Happily, the American-made lamps of high standing infrequently blacken so seriously as to necessitate removal before burnout, but there are cases on record where lamps may live much beyond the designed life and degenerate into electric heaters. They become like the hose-nozzle that might gradually be allowed to have its orifice reduced in size and from which less and less water flows. Consequently the up-to-date user in many instances finds it economical to remove lamps which have burned beyond their normal period, and have become darkened.

A moment's calculation will disclose the very slight cost of this perfection of service. For example, consider the 100-watt Mazda lamp which the reasonably large user will purchase for 20 cents. During its rated 750-hour life it will consume 75 kilowatt-hours of energy at 3 cents per kilowatt-hour, which will cost $2.25. A 9 per cent average loss of efficiency during such a burning time (say the second 750 hours) would be equivalent to 20 cents or the cost of a new lamp.

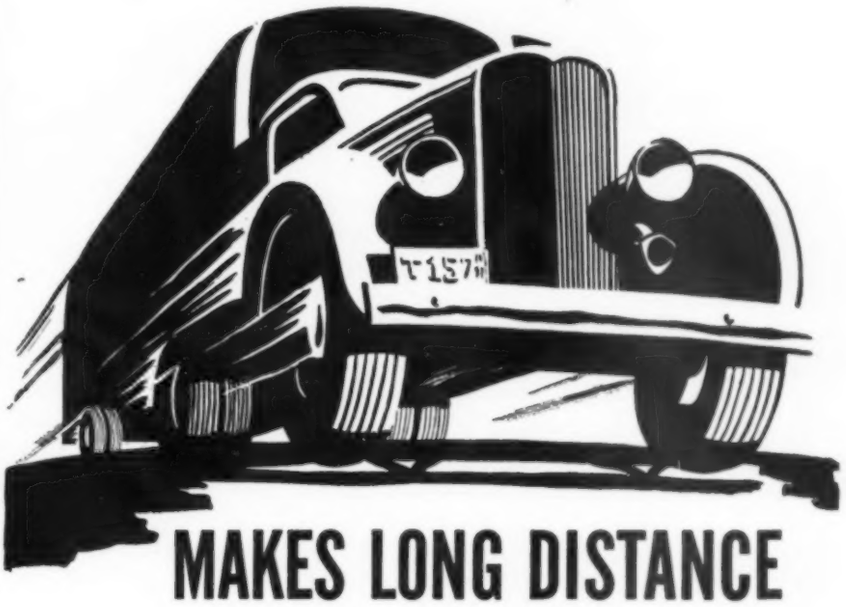
Maintain Correct Voltage: Another pocketbook problem in connection with the economics of maintenance is the under-voltage burning of the lamp. The general features of wiring and voltage have been discussed previously but under our present consideration comes the matter of voltage as effected strictly by maintenance. To a minor degree, there may be some loss in voltage due to any corroded contacts throughout the system. To a greater degree, there is a voltage loss resulting from haphazardly extending or overloading branch circuits, a temptation that exists through practicing the false economy of saving a little copper at the cost of lumens.

The voltage drop in any system should not exceed 2%. In the main, this is counter-balanced by providing a slightly excess voltage at the service entrance or the distribution panel. The cost evaluated in units of light amounts to approximately a 3 per cent diminution of illumination for a 1 per cent drop in voltage. Consequently the highest economy dictates that there must be the closest possible agreement between the designed and rated voltage of the lamp and the actual socket voltage, or that the latter be not less than the former. By over-voltage burning, one gains light at the cost of life, but as lamp bulbs have been and are in general constantly decreasing in first cost, this feature of operating costs deserves much careful study.

Keep Reflectors and Bulbs Matched: Finally, in our endeavor to strengthen each link, and to secure the most "seeing-ability" for our dollar, we must direct our generated light to its point of usefulness. If the glass reflector be broken, the light is wasted sidewise, since the proper reflector usually increases the usable light from two to three times over that from the bare lamp. If the metal reflector becomes tarnished or bent much the same thing occurs.

If—and this is an important point—the wrong size of lamp bulb be inserted in the reflector, then the emitted beam is changed and the combination loses effectiveness. For example, a 200-watt size of reflector and corresponding wattage of lamp will emit light with an output efficiency of about 70 per cent. If a 150-watt

(*Please turn to page* 70)



MAKES LONG DISTANCE HAULING MORE PROFITABLE

● Any make or type of truck engaged in long distance hauling can be operated more profitably when equipped with a 2-speed axle. Reduces cost of gasoline, oil, and repairs. Gives better performance on hills. More profitable speed on level roads. Smooth starting—no damaging shock to driving parts. Quicker getaway in heavy traffic. These claims can be proved. Investigate.

EATON MANUFACTURING CO.
CLEVELAND, OHIO

EATON
Ruckstell
2 SPEED AXLE
with New Eaton Forced Flow Axle Lubrication
8 Speeds Forward—and 2 Reverse

Small
CONVENIENCES
BOOST
TRUCK
EFFICIENCY
WHEN your truck body is completed with doors hung and locks installed, those final finishing touches that provide utmost safety and convenience should always be considered. Eberhard body hardware specialties include many small conveniences that save driver's time and insure safety of truck and load at small expense. Ask your dealer about these genuinely useful Eberhard items: Door Holders, Folding Lock Handles and Steps, Recessed Rope Rings and Hooks, Rope Knobs, Chain Fastenings, Special Lock Handles, Binding Hooks, etc.
EBERHARD MANUFACTURING CO.
Division of the Eastern Malleable Iron Co.
CLEVELAND, OHIO
EBERHARD
BODY SPECIALTIES
FULL DETAILS IN CATALOG Nº 11.

lamp be inserted in this same reflector the output efficiency drops to about 62 per cent. One of the best checks on this loss is to guard against the careless interchange of bulbs and accessories.

Plan Inspection Schedule: The whole secret of an efficient lighting installation after it has once been properly installed lies in *planned periodic attention.* Frequently sight-meter surveys are recommended in order to detect depreciation. Above all, the maintenance must be made the regular duty of a reliable employee who appreciates the worth of his job. He should receive credit for doing a good job. Neglect that is quite common today has been proven to reduce the possible illumination by an estimated amount of easily one-third. Reasonable maintenance seems to cost much less than the value of the light gained thereby.

The total lighting bill of the United States last year was perhaps 690 million dollars. Adequate and intelligent maintenance may save one-third of our lighting costs or may add a corresponding amount to our usable illumination and may therefore be worth $230,000,000.

The Case for Governors

(*Continued from page* 36)

second gears excessively in climbing grades, resulting in low gasoline mileage; naturally there will be a very material increase in maintenance cost of vehicles so equipped and operated.

Either device (throttle-stop or restriction-plate) has its limitations and shows an excessive loss of power and very poor control. With the restriction-plate, the automatic choke valve on some cars does not open rapidly enough because of the lowered vacuum pull on the hot air system, that heats the choke-operating thermostat. This causes the choke to remain "on" too long, with a resultant over-rich mixture, and a highly unsatisfactorily performing engine.

It is true that some manufacturers of vehicles have been using the above means for initial break-in or for transporting vehicles to dealers; also furnishing economy kits with throttle-stops or restriction-plates as a part of this equipment. It has been demonstrated that the saving in gasoline alone on a 1,000-mile truck driveaway more than pays for the governor over a restriction-plate or a throttle-stop.

When dynamometer tests of engines equipped with restriction-plates or throttle-stops, show a loss of power, (as high as 72 per cent) at the governed speed, it is difficult to imagine why manufacturers should built into their engines maximum horsepower and torque and then rob them of this ability with a small, inexpensive device of this nature, or why fleet operators should confuse this equipment with governors, possibly only because of the cheapness in the initial investment, without consideration of the consequences when this type of equipment is used.

The graphs shown in conjunction with this article definitely prove that throttle-stops or restriction-plates can rob the engine of acceleration ability and as high as 72 per cent of its horsepower and torque, and that the natural consequences in the use of these devices result in various types of engine failure. An excessive amount of unburned fuel will be noted with the restricted-orifice type. This condition results from the use of these plates which causes excessive wear on cylinder walls, pistons, piston rings, and the various reciprocating parts; also crankcase dilution.

The information given previously in this article, which is plotted in chart form, is taken from actual tests; it should prove of considerable interest to fleet operators, especially taxicab and light truck operators, who have used this type of equipment. A good many will be surprised at a 72 per cent loss of horsepower at the controlled speed under road load.

It has also been proven that a poor governor is not much better than a throttle-stop or restriction-plate from the standpoint of power losses. It is also true that some governors of the

earlier types, and especially those governors which have a tendency to stick either from bearing-seizure or from other causes, will give a result similar to a restriction-plate.

Governor equipment should be maintained at the same high standard as carburetor, generator, or other accessories on the vehicle. The slight cost in governor repair or replacement is offset many times per year in the saving of fuel consumed alone, plus the desirability and efficiency acquired by the use of governors.

Good governors are available and should be used for economy, efficiency, and safety. The first cost should never be considered in a governor purchase, because there can be a vast difference in governors, and they should be purchased on a performance basis. The failure of a poorly designed governor on one truck will cost the operator many times more than the slight extra charge for high quality, trouble-free governors for his entire fleet.

Getting back to the survey on governors made by this publication, as mentioned in the opening paragraphs of this article, it is interesting to review the fact that the great majority of the participating fleet operators found governors to increase engine life, to reduce accidents and maintenance costs, and to practically eliminate all "tickets" for speeding, fines, etc. The following percentages in reductions were noted, as indicated in the survey:

Engine Repair Costs	25-30% avg.
Tire " "	25%
Insurance Costs	25%
Lubrication "	25%
Fuel Costs	20%
Brake Maintenance	30%
Accident Costs	50%

A great majority of the fleet operators reported, in this survey, that governors are both a safety device and a maintenance necessity.

The survey in question covered a cross-section of the United States and represented fleet operators in various lines of business, including trucks, buses, passenger-cars, tractors and taxicabs—a grand total of 28,000 vehicles. The fleets are located in 35 states.

Out of this grand total, it is interesting to note that only one operator admits using throttle-stops. This writer has found that devices of this kind are dangerous, because they prevent full power being developed by the motor at any speed, and that any motor with these devices installed will be slow on acceleration, requiring four or five times the required time of a governed vehicle to come to its set speed. Naturally, it is dangerous in passing other vehicles and results in considerably higher speed downhill than the set speed on a level highway, and often the speed is reduced to nearly a "crawl" on uphill operation.

1937 Truck Production

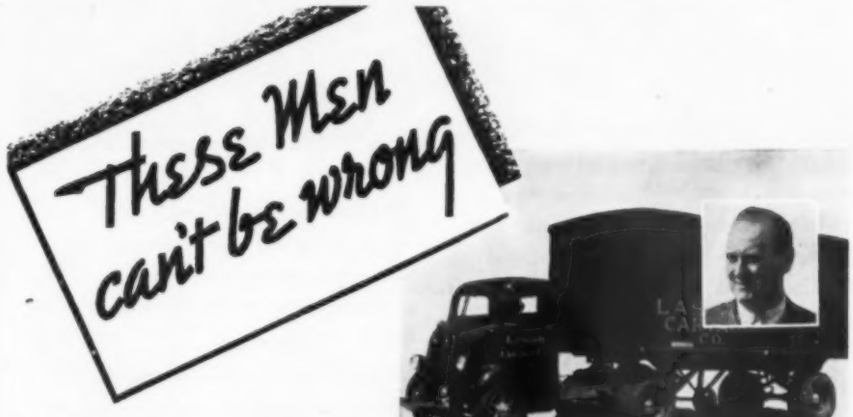
(*Continued from page* 28)

Carriers of the Interstate Commerce Commission in 26 states. The remainder of the states, with the exception of one, have assured recognition of those interstate vehicles that comply with the I. C. C. regulations.

While for-hire trucking, measured in terms of enterprises and number of units operated, represents a comparatively small part of the service performed by motor trucks, its average gross revenue is now in the neighborhood of $600,000,000.

A review of merger and acquisition of control applications approved by the Interstate Commerce Commission under the Motor Carrier Act indicates a trend towards ownership of equipment by fewer and larger companies.

Hundreds of truck bills were introduced in the 45 state legislatures that convened during 1937, but few were passed. These included the tax law adopted in Indiana which bases the truck fee on tire sizes, and involves an increase in the fees paid by shipper-owners of trucks. The tax on private carriers was also increased in Georgia. (*Cont. on page* 72)



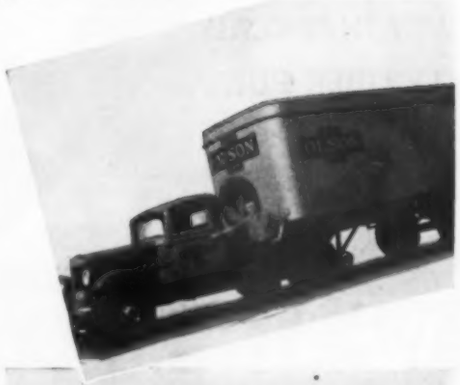
● When fleet superintendents and drivers learned by experience that Hoof Governors are an asset rather than a liability, it was only natural that they revised their specifications. These three men are typical examples of modern up-to-date fleet operators. Road tests were made, all sorts of traffic conditions were experienced — long hills under full load were traveled without interfering with schedules—then and only then Hoof got their stamp of approval.

Here are facts they discovered by regular trip test: (1) Hoof Governors allow full engine power up to the rated speed for any road situation. (2) They are factory adjusted, eliminating all necessity for road adjustments after installation. (3) Exclusive cantilever spring feature and only one moving assembly make them absolutely trouble-free in operation. (4) Guaranteed tamper-proof. (5) Drivers prefer them because their schedules are not hampered and all normal driving practices may be maintained.

These men frankly state that their maintenance and accidents have decreased and that operating conditions have been satisfactory.

Write Hoof for full particulars.

S-20H Key Type for 1¼" Carburetors



Top — L. M. Holtz, Shop Superintendent, Lasham Cartage Co., Chicago.
Middle — Geo. Madison, Garage Supt., Fred Olson & Son Motor Service, Inc., Chicago.
Bottom — Al Linstrom, veteran driver of Decatur Cartage Co., Chicago.

HOOF PRODUCTS COMPANY
162 NO. FRANKLIN STREET — *Cantilever Governors* — CHICAGO ILLINOIS

Don't let
VIBRATION
bring the Fleet in
TRANSPORTATION profits roll in only when the fleet rolls on . . . not when it rolls in for repairs. Vibration can quickly send it scuttling for the repair shop with broken fuel lines.
That's why truck builders use Weatherhead flexible fuel lines as original equipment. It's vibration proof and oil proof.
Play safe! Use Weatherhead for replacements and you'll put the fleet back on the road quicker and keep it there longer.
WEATHERHEAD
FLEXIBLE FUEL
LINES The safe line for replacements
WEATHERHEAD
300 E. 131 ST. CLEVELAND, OHIO

While several measures were introduced to bar trucks from highways on Sundays and holidays, a procedure that may work a hardship on consumers as well as on truck owners, Minnesota was the only state to enact a law with these provisions.

A ruling by the Federal Circuit Court of Appeals at Columbia, South Carolina, during the past year struck an optimistic note for interstate trucking. In this ruling it was held that enforcement of the South Carolina law, providing an arbitrary weight limitation of 20,000 pounds, is a discrimination against interstate commerce, and contrary to the principles involved in the construction of federal-aid highways. The state may contest this ruling in a higher court. The South Carolina Legislature passed a bill in 1937 that would provide much more liberal limitations, but this measure was vetoed by the Governor.

Operators in Kentucky have since filed injunction proceedings against enforcement of the Kentucky 18,000-pound gross weight limitation.

Despite its size, the motor truck industry is still young and is gradually being adjusted to its most useful sphere in transportation. Adoption of uniform state laws, towards which there is a decided trend at this time, will expedite this adjustment.

•

"Court" Cuts Accidents

(*Continued from page* 30)

tive of the transportation department, and the department head or supervisor to whom the driver reports. Representing the transportation department in Consolidated's court of inquiry are Robert H. Clark, assistant general superintendent of transportation, and John H. McNulty, supervisor.

Detailed information of the accident already has been supplied by the driver and an investigation of the case has taken place before the meeting of the court. On display is the miniature street-scene and its toy vehicles with which the driver re-enacts the accident. Questions are asked and answered with every angle of the accident fully explained to the committeemen before the driver goes away.

The committee fixes responsibility for the accident. It defines a Company driver accident as one "wherein the Company driver could have avoided striking or being struck, regardless of the other driver's actions." Last year fewer than one fourth of the accidents throughout the System were attributed to Company drivers.

The Investigation Committee, finding a driver responsible for an accident, makes various recommendations. It may request him to attend a series of special safety lectures. It may refer his case to the department head under whom he functions. It may send him on the road with an expert driver for extra "schooling." It will recommend his removal from driving if he is a "repeater."

All accidents, no matter how significant, must be reported to the department head and the safety engineer. A great many of them are disposed of without reference to the court of inquiry. An analysis of the accidents over a period of years shows that most of them are of a trivial nature. More than fifty per cent in the last six years took place when Company cars were at a standstill.

Trucks and passenger cars are kept under constant surveillance to assure their safe operation. Vehicle troubles are listed by the driver each evening in the log of his day's journey and those defects are corrected in the garage that night, if possible. Special attention is given to the inspection of tires and they are replaced before the non-skid value is worn away. Expert mechanics from Edison garages go to the assistance of drivers in trouble, changing tires and making minor repairs on the road, when necessary. Each vehicle undergoes a thorough and rigid inspection every eight weeks.

Edison drivers must pass a physical examination, which includes sight,

hearing and heart action. Among the 4,000 drivers of the System are a sizeable number of veterans, who first drove horse-drawn vehicles, graduating to the electric truck and finally the gasoline car. Several of them have driven for more than thirty years without an accident. . . . (Our Congratulations, Consolidated Edison!—Editor).

In the photograph which heads this article, Consolidated Edison's "traffic court" is shown sitting in judgment on an accident case. Principals in this inquiry are: left foreground—William J. Duffy, driver of vehicle involved in accident; left foreground, seated—Robert H. Clark, assistant general superintendent of transportation; head of table—William F. Brown, automotive safety engineer; right of Brown—John H. McNulty, supervisor of transportation.

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Facts on Headlights

(*Continued from page* 32)

trouble to find out.

It is hardly defensible, but highly possible, that the driver may think of glare of his own vehicle's case as being the other fellow's problem. He should remember, instead, that when lights are so disposed as to gleam in the other fellow's eyes, they are not providing the pattern of light—or flood of light—that he needs for his own safety. The lights so aimed as to blind the driver of an approaching car are providing the wrong kind of light for everyone concerned.

Simplest of all forms of correct headlight maintenance is that of keeping the lenses clean. Although few fleet operators seem aware of the fact—for all its obviousness—it is possible that the volume of light available may be reduced 10 to 15 per cent by a dirty lens. Moreover, it is likely that this amount of dirt on the glass will result in beam distortion which cannot provide the stream of light that can be followed with safety in high speed night driving.

The real unit of power in any headlight, of course, is the reflector. The startling amount of light which can be obtained from a bulb of 32 candlepower is due entirely to the reflector's work in magnifying the original volume.

Reflectors are protected to a far greater degree than ever before, against weathering effects and the admission of dust and dirt which mars their highly polished surfaces. Most lamps are of the "doorless" type that this end may be served. It remains a fact, however, that no matter how tightly the reflector is sealed against enemies of its efficiency, these enemies still assail it. Just as in the past, however, a dirty reflector can be cleaned.

The cleansing method remains much the same as in the past if the fleet operator wants to do the job at home. A small supply of jeweler's rouge, moistened with a few drops of alcohol and rubbed lightly on the surface of the reflector will restore its original brightness if it has not become scratched or chipped. In the latter case, new reflectors or wholly new lamp units are dictated. They won't be found nearly as expensive, in those extreme cases where they are needed, as many people imagine.

Correct maintenance of headlights has become a matter of tremendous importance in this period of high-speed night driving. That this is the case is implied in the desire of motor vehicle engineers for the legal right to produce headlights of 75,000 candlepower. That enormous volume of light, they are convinced, is not too much under current conditions. But, in sharp contrast with the technician's hopes for more light—and more safety—some fleet operators go on being extremely wasteful of the former and apparently indifferent to the latter. With only 50,000 candlepower available to them under the best of conditions, they suffer conditions to exist which are far from the best.

DIETZ QUALITY LITES & SIGNALS

Insure "SAFETY" That Safeguards Hauling Profits

SAFETY is a factor that directly affects hauling profits. Dietz reliable Lites and Signals represent no fads and fancies but are essential safety equipment for profitable operations. The name DIETZ has been a guarantee of fine quality for nearly a hundred years. The oval trademark stamped on all goods assures highest grade manufacture, long wear and genuine value.

No. 609 FOG LITE

No. 309 FOG LITE

Fog Lites are made in varied finishes with mountings for every requirement.

No. 371 STANDARD

DIRECTION SIGNALS are Single Face or Two-Way, also supplied for flush mounting.

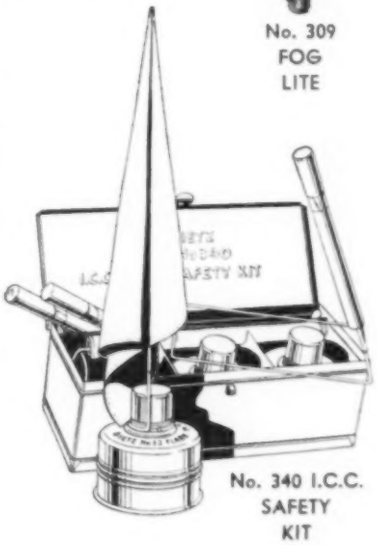
No. 75 F.D.S. REAR VISION MIRROR

No. 379 TWO-WAY

•

Dietz No. 75 F.D.S. Rear Vision Mirror has a special bracket for mounting Mirror and Direction Signal on front fender.

Dietz I. C. C. Beacon Bulb Kit provides safe, handy storage for spare light bulbs required by I. C. C. regulations. Holds 6 bulbs.



No. 340 I.C.C. SAFETY KIT

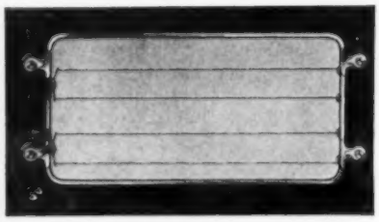
DIETZ I.C.C. BEACON BULB KIT

R. E. DIETZ COMPANY, NEW YORK

PIONEER MAKERS OF VEHICLE LAMPS, FOUNDED 1840

HEAD LIGHTS • TAIL LIGHTS • MARKER LIGHTS • DITCH, FOG & SPOT LIGHTS • DIRECTION SIGNALS
TRUCK FLARES • REAR VISION MIRRORS • FLOOD LIGHTS • CATAPHOTE REFLECTORS • FIRE EXTINGUISHERS

"It's Dangerous When Live Wires Are Down!"



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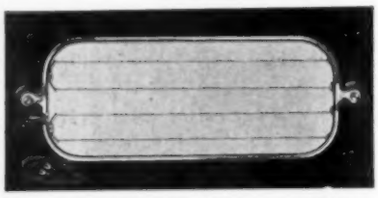
No. 4-E. ENAMEL FRAME.....$3.00
Glass Size 16" x 8". 4 Heating Wires



No. 3. CHROME FRAME.....$3.00
No. 3-E. ENAMEL FRAME.....$2.50
Glass Size 16" x 6½". 4 Heating Wires

Order thru your nearest wholesale house or write us for complete illustrated catalog pages.

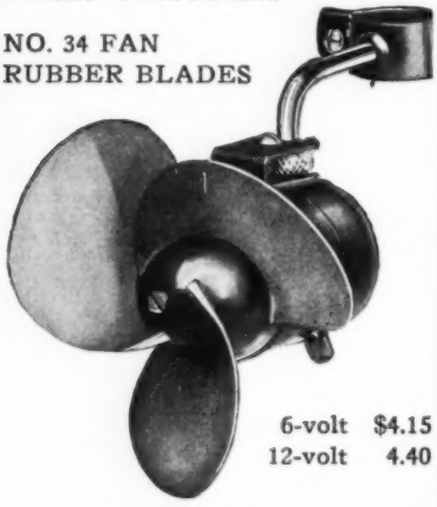
Keep frost off inside of windshield in winter, fall and spring. Attach to steering post or on header board. Has an efficient dependable motor, sturdy fan—attractive designed rubber blades. More air velocity—less current used.

"We must move fast, and it's always in the worst weather. All of our trucks and service cars are equipped with CASCO Electric Defrosters for clear vision and safe driving thru the most severe storms. When wires are down, it's dangerous. We must get there quickly and surely."

So quotes a typical Utility Company. They selected CASCO glass-type Electric Defrosters because they prove *absolutely dependable* under all conditions. They *positively* remove ice and sleet from the windshield.

Equip every truck, bus, or passenger car with CASCOs *now*. When sleet storms strike, have them ready for instant use, for clear vision, safe driving, no delays, no driver fatigue. CASCO performance is assured by eight years of service and millions of satisfied users. Insist on CASCO Electric Defrosters.

NO. 34 FAN
RUBBER BLADES



6-volt $4.15
12-volt 4.40

CASCO PRODUCTS CORP. BRIDGEPORT, CONN.

Also CASCO Illuminated Switches for Defrosters and Hot Water Heaters, Fender Guides, Cigar Lighters, etc.

New White C. O. E.

(*Continued from page* 42)

226 inches, and is rated in the 4½ to 8-ton field. Powered by a White six-cylinder engine of 362 cubic inches displacement, the new model has a seven-bearing steel crankshaft, and exhaust valves of special heat-resisting steel. The exhaust valves seat on special steel valve-seat inserts which are shrunk and pressed into the cylinder block. Valve-lifters are of the zero-lash hydraulic type which are self-adjusting—they are said to improve valve life, remain quiet permanently and allow more seating time per engine cycle.

Full-pressure lubrication to all main, connecting-rod, camshaft, piston-pin bearings and timing gears is fed through rifle-drilled passages. The Model 750 has a five-speed, fourth-direct transmission, a double-reduction, full-floating rear axle, and four-wheel hydraulic brakes. Cast steel wheels are standard on the new White, while standard tires are 9.00-20, single front, dual rear.

White also exhibited at the truck shows, its latest line of aluminum-bodied, metropolitan-type transit coaches, powered by the new White 12-cylinder, under-floor engine, and the recently-announced Model 800 "Merchandor" delivery truck. In all, twelve varied truck and bus models, representing as many nationally-known truck-fleet operators, and ranging through all sizes, weights and prices, were exhibited. J. N. Bauman, vice-president in charge of sales supervised the exhibit.

The new models are ready for delivery. . . . Complete literature may be obtained by writing directly to The White Motor Company, Cleveland, Ohio. . . . Mention of FLEET OWNER is always appreciated.

•

1938 Ford Trucks

(*Continued from page* 44)

provide greater structural strength. Side panels are double sealed at floor by felt and sheet rubber. Rear doors are hung in a welded one-piece, channel-steel frame. Steel panels extend from floor to tops of wheel-housings and protect interior body structure. Floor planks are cut with overlapping edges to make a tight floor.

The 134-inch and 122-inch panel bodies have the same width and height, 55¾ and 55¼ inches respectively. Load length of the former is 119¼ inches and of the latter, 107¼ inches. Door openings are 46½ inches high and 46¼ inches wide. Rear doors are sloping and are sponge rubber sealed.

Larger advertising panels are proided. They start at the door post and extend to the rear of the body sides. A new body molding treatment heightens the streamline effect and permits more effective use of

KEX PLUGS

Repair Punctured Casings

Keep Out Wetness, Sand and all Destructive Elements that Cause Tread Blisters and Blow-outs. Get Many Additional Miles at a Fraction of a Cent per Mile.

KEX WHITE
Coating for Tire Walls.

Use on Black or White Side Walls. Beautiful . . Waterproof . . Self-Vulcanizing . . Penetrating.

The WEDLER-SHUFORD CO.
ST. LOUIS, MO.

decorative stripes. Load length of the 112-inch panel has been increased to 87¾ inches, width to 55 inches. The height is 51⅝ inches. The door opening is 46¼ inches wide and 44 inches high.

"Bridge-type" construction is used in building stake and platform bodies. Heavy-gauge steel channel members forming the outside framing are riveted to steel cross-girders attached to body sills. The flooring is protected by steel skid strips. Stake sockets are firmly attached to both sides of platform frame rails by riveting and welding.

The 134-inch stake and platform bodies have load lengths of 106 and 109½ inches respectively and widths of 82 and 87 inches respectively. The hydraulic dump truck has one and one-half cubic yards capacity.

Load length of the one-tonner platform body is 93⅜ inches, width, 77¼ inches. Load length of the stake body is 90 inches, width 72 inches. Load length of the 112-inch stake body is 80 inches, width 62 inches.

A new body, the express, makes its appearance on the one-ton chassis. With a load length of 96 inches and width of 54 inches, it is expected to be particularly useful as a general utility unit.

Flareboards on this body are rolled at the top edges for added strength. They are 22¼ inches high. The tail gate is similarly treated except that the roll is expanded in the center to obtain a truss effect. The tail gate fittings and drop chains are of improved design.

Heavier gauge steel is used on the 112-inch pickup body. Flare boards and tail gate also have new rolled edge reinforcements. The floor load is carried on angle framing riveted to body sides. Body sills rest on X-members as well as side frame members. Corner posts are round, for greater rigidity. Load length of pickup has been increased to 77¾ inches and height of flare boards to 20¼ inches.

Braking action on the trucks has been improved through use of larger brakes and self-energizing brake shoes with cable and conduit control. Quicker stopping is obtained with much less pedal pressure, it is claimed. Drum diameters have been increased to 15⅛ inches. Drums are ribbed for added strength and quicker cooling.

The reception accorded the 60 horsepower V-8 engine in 1937 insured its continuance as a worthy companion of the popular 85 horsepower V-8 engine. A choice of two engines is available in all one-ton trucks and in all commercial cars except the station wagon which is equipped with the 85 horsepower engine only. The 134 and 157-inch trucks have the 85 horsepower truck engine.

Truck steering has been made easier through use of a new worm-and-roller type steering gear and a larger steering wheel. Steering gear ratio has been increased to 18.2 to 1 and wheel diameter to 18 inches.

Such chassis features such as full torque-tube and radius-rod drive, full-floating rear axle, straddle-mounted driving pinion, and centriforce clutch on trucks; and ¾-floating rear axle, straddle-mounted pinion, centriforce clutch, interleaf lubrication and oil-less-type spring shackles on commercial cars, are continued.

De luxe equipment for trucks available at low extra cost includes chrome windshield frame, chrome windshield wiper, chrome hinge-mirror and bracket, chrome grille and colored wheels.

The 122-inch trucks have disc type wheels with large rustless-steel hub caps. Rims are full truck type. Tires are 7.00 x 17-inch, 6-ply; 7.50 x 17-inch, 8-ply heavy-duty tires optional at additional cost. Changes have been made on the larger trucks which will permit at slight additional cost the use of 7.50 x 20 tires with single or dual wheels.

3 Reasons why more fleets choose Midland Power Brakes

1

162 SALES AND SERVICE DEPOTS

• The nation-wide network of Midland distributors and service stations makes prompt service available for your fleet from coast-to-coast. The Midland sign on any brake service establishment is the mark of modern and efficient service.

2

STANDARD EQUIPMENT OF 32 MANUFACTURERS

32 manufacturers of trucks, tractors and trailers have chosen Midland Power Brakes as *standard equipment*. This wide-spread acceptance has been earned by trouble-free, low-cost performance. Specify Midland on *your* fleet.

3

FACTORY REBUILT EXCHANGE PLAN

Midland insures economical power braking by their policy of exchanging your Midland equipment for factory rebuilt units carrying new-unit guarantee. This exchange plan means both low-cost maintenance and top-notch performance at all times.

THE MIDLAND STEEL PRODUCTS CO.

10609 Madison Avenue • Cleveland, Ohio

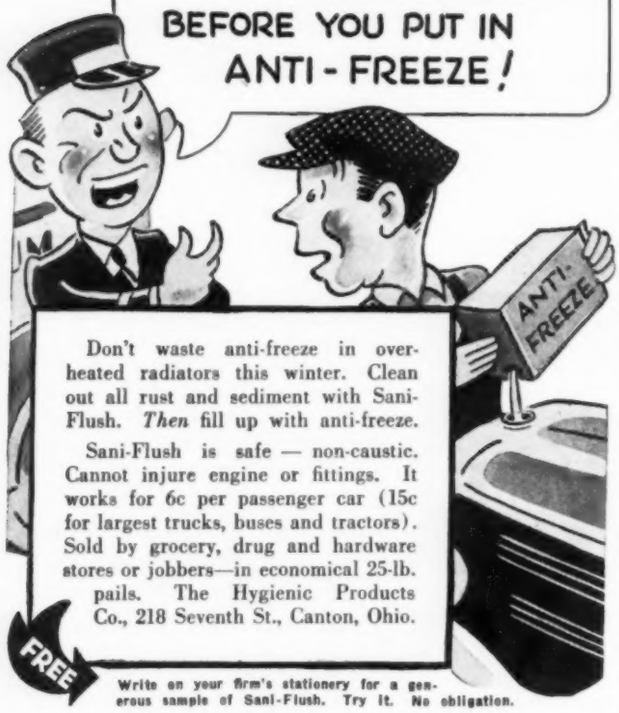
MIDLAND POWER BRAKE EQUIPMENT

MIDLAND

(CHRISTENSEN)

Power Brakes

YOU'RE CRAZY IF YOU DON'T CLEAN OUT YOUR RADIATOR WITH *Sani-Flush* BEFORE YOU PUT IN ANTI-FREEZE!



Don't waste anti-freeze in overheated radiators this winter. Clean out all rust and sediment with Sani-Flush. *Then* fill up with anti-freeze.

Sani-Flush is safe — non-caustic. Cannot injure engine or fittings. It works for 6c per passenger car (15c for largest trucks, buses and tractors). Sold by grocery, drug and hardware stores or jobbers—in economical 25-lb. pails. The Hygienic Products Co., 218 Seventh St., Canton, Ohio.

FREE

Write on your firm's stationery for a generous sample of Sani-Flush. Try It. No obligation.

SAFETY LIGHTING BY K

35,000 Candle Power* At Your Service

The most powerful and effective fog lamp ever designed . . . the sweeping amber beam thrusts its rays through fog, sleet, snow, rain or dust providing safe, easy driving in adverse weather.

All chromium . . . 7 in. lens . . . ready for installation. Pre-focused Mazda bulb. New brackets. Installed in pairs for added safety. Some states permit its use instead of headlamps when coupled to tail lamp.

* Apparent

THE MASTER FOG AND ADVERSE WEATHER LAMP

Write for I.C.C. charts, and digest of lighting laws.

The K-D Lamp Co.
CINCINNATI, O.

1937 "Motor Trucks Facts" Just Issued

EVIDENCE of the increasing importance of motor truck transportation to agriculture and industry, and as an employer of labor, is indicated in the 1937 edition of *"Motor Truck Facts"* released recently by the Motor Truck Committee of the Automobile Manufacturers Association.

"That motor truck transportation is as indispensable to public welfare as any other public agency, is found in the production, use and employment figures contained in this booklet," declared Arthur C. Butler, Secretary of the Motor Truck Committee.

"Registrations of motor trucks have reached a new high of 4,023,606 vehicles, and these units employ over 3,000,000 men delivering essentials from production plants to the door of the consumer. In addition to the drivers, scores of thousands of workers are employed in the construction and maintenance of the vehicles and in the accessorial lines of business.

"Nearly 100 per cent of the milk is moved into the majority of leading cities in motor truck units. Where less than 2 per cent of the livestock was transported by motor trucks in 1916, now approximately 54 per cent is brought into the leading markets over the highways.

"The annual tax bill of motor trucks owners, excluding that which is paid in personal property taxes on trucks in operation, income and property taxes on garages, terminals, repair shops, and trucking companies, totals $383,563,000, an amount which it is estimated would build 10,000 miles of first class roads."

Some other facts recorded in the booklet are:

1.—Trucks above 5-tons capacity are taxed nearly four times those of 1½-tons or less.

2.—Large truck fleets are owned largely by private shippers.

3.—Nearly $600,000,000 is grossed annually by for-hire trucking concerns. Half of this revenue is received in eight east and midwest states, including Illinois, Indiana, Massachusetts, Michigan, Ohio, Pennsylvania, New Jersey and New York.

4.—48,000 communities depend solely on motor trucks for transportation.

5.—Table containing state limitations on motor trucks sizes and weights.

6.—$900,000,000 worth of livestock was hauled over the highways last year.

●

Fleet's Tax Bill Nearly Equals Payroll

HOW high taxes add to the costs of motor transportation is evidenced by the tax bill paid last year by the Rocky Mountain Lines, a trucking organization with headquarters in Lincoln, Neb.

The company in 1936 paid a total of $14,000 in gasoline, license, and other automotive taxes. This amount was equal to seven-eighths of the $16,000 paid in wages during 1936. The company is capitalized at $18,000, so that its tax burden is equivalent to 78 per cent of its capital investment, according to American Petroleum Institute.

Like other trucking organizations, the company spends considerable sums for safety. Last year the company paid $4,000 for insurance to cover the activities of its trucks and trailers. Each vehicle, before leaving the shop on its run, is carefully checked for safety requirements. Brakes must be adjusted properly, lights focused, tires inspected, etc.

New Free Book on Starting Diesels

"ELECTRIC STARTING OF DIESELS" is the title of a new 16-page book recently issued by the makers of Exide Batteries.

The book contains a description of the testing procedure and equipment developed by Exide engineers in applying electric starting to Diesel engines.

The first chapter explains the Diesel engine thoroughly—how it has developed—its adaptability—and the difference between its operation and that of a gasoline engine.

Another chapter explains electric starting principles, telling why high cranking speed is essential and pointing out why low temperatures and oil viscosity are factors to be considered.

The book is profusely illustrated with photographs of Exide engineering devices and also many actual field Diesel installations. For your free copy address The Electric Storage Battery Co., Allegheny Ave. & 19th St., Philadelphia, Pa. . . . Mention of FLEET OWNER will help you to secure a free copy of this book promptly.

●

I.C.C. Surveys Fleets on "Top Speed"

REPRESENTATIVE motor carriers have been circularized by the Bureau of Motor Carriers asking their views on whether a maximum speed limit for interstate trucks should be incorporated in the safety regulations of the Interstate Commerce Commission, Much may depend on the replies received. In a memorandum accompanying the circular, it is pointed out that there are two main aspects to the speed problem.

One of these is that under certain circumstances, a speed of even 15 miles an hour may be too fast. The other is whether limiting the top speed of motor vehicles actually reduces the number or severity of accidents.

The Bureau has asked truckmen to indicate in their replies if they make any attempt to limit top speed and, if so, in what manner— instructions to drivers, road inspectors, throttle stops, engine governors or any other means. Reasons are requested for the discontinuance of any speed control method tried and found wanting.

●

Esso Marketers Honors Safe Drivers, etc.

A TOTAL of 234 drivers, including motor tank salesmen, drivers, commission agents and others operating company equipment, were placed on the company's roll of honor by the Esso Marketers, for having operated their vehicles for at least five years without an accident. A substantial proportion of these drivers had completed more than ten years of driving without a single accident.

Operators from the Virginia district led all other divisions of the company in the number of safe drivers, numbering 45. New Jersey with 32 citations, and Tennessee with 30 followed. In order the other divisions were Pennsylvania 23; Delaware, Maryland and District of Columbia (combined) 23; South Carolina 20; West Virginia 18; Arkansas 14; New York 10, and New England 7.

Twelve of the drivers from the combined Delaware, Maryland and District of Columbia divisions have driven more than ten years without an accident.

ON HOW TO
CUT COSTS *with*
Hub Odometers

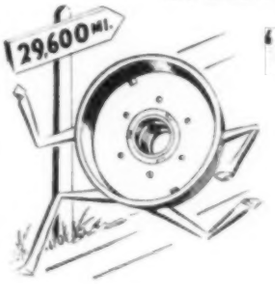
You know exactly how far your trucks and trailers travel—forward *and back*—when they're equipped with Veeder-Root Hub Odometers. And knowing your mileage, you can readily see any possible chance to cut your costs in gas, oil, tires, repairs.

Hub Odometers give you *true* mileage records under all conditions because they can be adjusted to check to 1/10" with all changes in wheel and tire dimensions. And any attempt to tamper is *instantly detectable.*

Veeder-Root Hub Odometers last. And their accuracy remains unimpaired, for they're double-sealed against road dirt and axle grease. Write today for literature.

VEEDER-ROOT Inc.
HARTFORD, CONN., U. S. A.

After 29,600 miles, these brake drums were just



"WARMING UP"

Recently a large fleet owner pulled the wheels on his pet trouble-making truck to inspect the Cemcalloy Drums he had installed 29,600 miles ago. Previously, the maximum brake drum life on this particular "Jonah" was 20,000 miles, with the average at only 12,000.

He found the Cemcalloy Drums in excellent shape. Amount of eccentricity was only three thousandths, amount of wear practically unmeasurable. The drums were just "warming-up" for thousands of miles of future hard service.

Small wonder the owner was pleased. You'll be pleased too, with Cemcalloy service on your trucks and trailers. Write for information.

CHRISTIANA MACHINE CO., Christiana, Pa.

CEMCALLOY
Reg. U. S. Pat. Off.
Heavy Duty BRAKE DRUMS

Send For Your Copy!

The latest and revised edition of our 48-page illustrated "AUTOMOTIVE CLEANING HANDBOOK" contains the answers to your questions on Internal and External Motor Cleaning, Cement Cleaning, Body Washing and all phases of automotive cleaning work.

You owe it to yourself as a fleet operator to get your copy of this valuable booklet now. Simply attach this ad to your letterhead and a FREE copy will quickly be on its way to you!

MAGNUS CHEMICAL COMPANY
36 South Avenue Garwood, New Jersey

Magnus CLEANERS

TRUCKS
CAN'T SKID
when drivers use
LINTERN SANDERS
Distributed by
BENDIX-WESTINGHOUSE AIR BRAKE COMPANY
5001 Centre Ave.,
Pittsburgh, Pennsylvania

Early Results of Fleet Safety Contest

ONE hundred and ninety-one of the 900 fleets enrolled in the National Fleet Safety Contest operated their trucks, buses and passenger cars more than 14,000,000 miles without an accident of any kind during the first three months of the competition.

This announcement was made recently by the National Safety Council, sponsors of the contest. All contestants reporting for the three months' period traveled 272,689,000 miles with an average of 2.02 accidents per 100,000 miles.

Vehicles of the Northern Division of the Shell Petroleum Corporation, Chicago, traveled 462,475 miles for the best no-accident record of the contest leaders. Leaders in the 10 principal divisions of the contest, with their no-accident mileage, are listed below. The records are unbroken as of September 30, 1937. (This contest started July 1, 1937.)

Passenger Car Division: Western Division, Shell Petroleum Corporation, Kansas City, Mo., 269,893 miles.

Inter-city Bus Division: Missouri Transit Company, Macon, Mo., 199,666 miles.

City Bus Division: Reading Street Railways, Lebanon, Penna., Division, 133,345 miles.

Inter-city Trucking Division: Division 1, Southwestern Transportation Co., Texarkana, Tex., 370,129 miles.

Manufacturing Division: Otis Elevator Company, New York City, 34,827 miles.

Petroleum Division: Northern Division, Shell Petroleum Corporation, Chicago, 462,475 miles.

Public Utility Division: American Utilities Service Corporation, Chicago, 269,563 miles.

Beverages and Ice Cream Division: Tech Food Products Co., Pittsburgh, Penna., 136,369 miles.

Bakery Division: National Biscuit Company, Buffalo, N. Y., unit, 306,156 miles.

Dairy Division: West Branch, Jersey Creamery Company, Detroit, 133,000 miles.

SPONGEX CUSHIONS

give comfort to the truck or bus driver, and to the bus passenger.

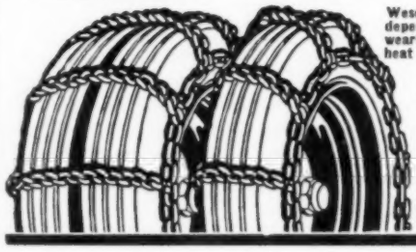
Yet—
they cut your cost of maintenance and replacement.

Proven by years of service to satisfied operators.

Write for complete information and prices.

THE SPONGE RUBBER PRODUCTS CO.
Derby, Conn. Dept. F.

WESCO
Chains *a complete line . . .*



Wesco chains are rugged and dependable . . . a long-wearing line of case-hardened, heat treated chains for cars, trucks and buses . . . on and off in a jiffy with the patented Wesco lock. Here is a line that will pay any fleet owner dividends and give complete satisfaction.

Write for circulars TODAY
WESTERN CHAIN PRODUCTS COMPANY
1815 Belmont Ave., Chicago

FOR THE OIL GASOLINE & WATER CONNECTIONS
VELLUMOID
VELLUMOID VELLUMOID

You can rely on VELLUMOID Sheet Packing and Gaskets. They are backed by 25 years of manufacturing experience. Only VELLUMOID has VELLUMOID Quality.
THE VELLUMOID CO., WORCESTER, MASS.

Governors Assist Proper Break-In

THE modern adjustable governor can be used as an effective means of making certain that the truck is "broken in" properly, states the president of a prominent governor corporation. "It is a well-known fact that a large part of the story of the performance of a motor truck is told in the first few chapters of its existence," he states. "The difference between the future performance of two trucks—one of which is 'broken in' properly and the other handled carelessly when new—is amazing. In all too many instances brand new trucks are placed in the hands of drivers who either through carelessness or indifference, neglect to take the proper precautions as regards the speed of the new vehicle. The result is a truck which costs too much to operate during its entire existence.

"The latest governors can be used very effectively for controlling speed during the 'break in' period. Governors are now made with such a wide range of speeds that it is possible with the same governor to make any adjustment desired for the vehicle. With the new type of unit it is possible in one governor to adjust for a range of from 1200 to 3400 r.p.m. With this wide range it is possible for the truck operator or fleet owner to follow the recommendations of the engineering department of the factory from whom he purchased his trucks. The new vehicle can be placed in service and governed to the recommended speed with the adjustment gradually being raised as the truck is 'broken in'. Trucks handled in this manner will return to their owners a much greater dividend of service than those which are 'broken in' in a haphazard manner. A far better fit of pistons in the cylinder bores is secured and better bearing surfaces are created on trucks which are 'broken in' in accordance with a definite program approved by competent engineers.

"This use of governors has been made possible by the fact that with modern methods of design, one governor is entirely satisfactory for a range of speeds which in former years would have required at least three and possibly four instruments. Engineers of the motor truck manufacturing companies heartily endorse the suggestion for governed 'break in' periods, with the speed being carefully held to definite limitations up to the time that the vehicle has had from 1000 to 2000 miles of service. A modern truck cannot be said to be fully 'broken in' below 2000 miles and indeed the breaking in process goes on for several thousand miles more than that."

•

TELL THE WORLD YOU'RE DRIVING SAFELY!

. . . is the title of a booklet every fleet owner should read. Learn how to win public good will.

Write Pierce Governor Company, 136 Ohio Avenue, Anderson, Indiana, for complete information about . . .

PIERCE ZONE CONTROL

STOP BEARING TROUBLE

Ask about MICHIANA Combination Series and Shunt Type Filters. The latest in Engine Protection—Write today

MICHIANA PRODUCTS CORP.
Michigan City Indiana

LITTLE GIANT
AUTOMOTIVE TRUCK EQUIPMENT

TEN WHEELERS
For Greater Tonnage—More Profit

For 1½ to 5 ton trucks. Increases carrying capacity up to 10 tons. Extends frame 42 in. Keeps the load in perfect balance . . . no teeter or end sway. Simple, sturdy, no intricate parts, assuring long life. Timken bearings; malleable castings; Bendix Duo Servo or Hydraulic brakes. Easily installed in 3 hours. Does not alter chassis. Truck retains its original efficiency. Made in 3 sizes.

WRITE for Circulars and Low Prices

LITTLE GIANT PRODUCTS, Inc.
1535 N. Adams St. Peoria, Illinois

"You Need More Gears"

After all, gear ratios are what count. Couldn't you use more gears every day if you had them? Of course you could. Lower gear ratios for power. Higher gear ratios for speed. Watson-Brown-Lipe Auxiliary Transmissions give them to you—just shift a lever — 12 speeds forward — 3 reverse. Thousands of users are profiting from better use of engine power, faster trips, lower fuel bills, reduced operating costs, less wear and tear, longer truck life and better performance.

Write for Catalog and name of nearest Dealer

Overdrives AND Underdrives EACH Standard Gear

H. S. WATSON CO., San Francisco & Toledo

AUXILIARY WATSON-BROWN-LIPE Transmissions

Cut Your Accidents with Hindview EXTENSION MIRRORS

Fewer accidents — fewer banged up bodies when your trucks are equipped with these Hindview Extension Mirrors. Extends from 14" to 22"—gives clear rear vision around any type body. Adjustable from driver's seat to any position. A sturdy handsome mirror built to "take it." See your dealer or write Whitehead for folder and prices.

WHITEHEAD STAMPING CO.
Est. 1903 1691 West Lafayette Detroit, Mich.

BRAKE LAWS ARE STRICT

● Brake failure is no excuse in the eyes of the law. In many states, the requirements set by law are rigid.

The Tru-Stop Emergency Brake *more than complies with these requirements.* It is a real emergency brake that will stop a heavy-loaded vehicle smoothly and quickly. When braking pressure is applied, every inch of lining makes contact. The result is positive, powerful braking response without noise, chatter or grabbing. The ventilated discs throw off friction heat and thus prevent overheating.

The Tru-Stop Emergency Brake is easy to install—any mechanic can do it. Little servicing is required. If adjustment or relining *should* be required, any driver can do the work in a few minutes.

Commercial vehicle owners will find it wise in many ways to insist upon Tru-Stop Brakes.

AMERICAN CABLE DIVISION
AUTOMOTIVE DIVISION, BRIDGEPORT, CONN.
AMERICAN CHAIN & CABLE COMPANY, Inc.
Manufacturers of the famous Weed American Bar-Reinforced Tire Chains

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ACCO

TRU-STOP *Emergency* **BRAKES**

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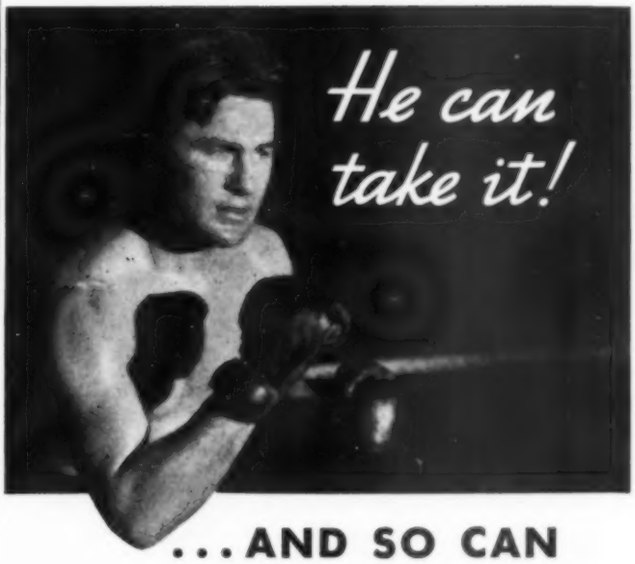

...AND SO CAN

ZENITH CARBURETORS

YOU bet Zenith Carburetors can take it! They have to, for the jobs they're intended to do. So into them go special construction and special metals which make Zenith the world's toughest carburetors.

Thus, you'll find Zenith Carburetors are factory equipment in America's leading trucks. Truck engineers choose Zeniths because they can stand the gaff. And because their efficiency extends through the whole power range—from idling to open throttle. At any speed, Zenith's power jet system assures maximum pull and power.

If you operate a fleet, check Zenith's performance against any other carburetor. You'll find Zenith gives you more power, more pull—yes, and more mileage, too.

The Zenith Heavy Duty Fuel Filter gives your engine protection at an amazingly low cost. Can be cleaned in a few moments. Requires no cartridge—no packing renewal. Quickly installed.

"Built for Permanence — *Calibrated for Performance"*

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A program of thorough modernization has made of the Webster Hall a truly magnificent hostelry. Larger and finer rooms...Also suites now available. Ultra-modern "Neo-Angle" baths. New furnishings and decorations. Air-Conditioning. The charm of this famous hotel, located in Pittsburgh's most beautiful section, is increased and enhanced by its splendor.

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Large rooms tastefully furnished to insure solid comfort – in a location that can't be beat for convenience – at rates which are surprisingly economical.

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BARLUM

810 OUTSIDE ROOMS
FROM $2.50 EACH WITH BATH AND SHOWER

CADILLAC SQUARE AT BATES STREET

Eight More Drivers Get Safety Awards

IN special recognition of their accident-free driving during 1936, eight employees of the Universal Truck Company of Worcester, Mass., were presented award of merit cards at a meeting of drivers recently held in the Company's plant, 201 Commercial Street.

Harold Swenson, representing the management, presented the awards on behalf of the American Policyholders' Insurance Company, which co-operates with its fleet operators in a program of highway accident-prevention. Olaf T. Sundlie, safety engineer representing the insurance company, gave a talk on the rules of safe-driving.

Drivers honored were Peter Aiello, Wilfred Bernard, David Bois, Charles Boothe, Arthur Danois, Walter Foley, Alfred Mandello and Harold Swenson.

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For exceptional convenience, courteous service . . and reasonable rates, choose

600 ROOMS $2.75 UP

THE HOTEL
PHILADELPHIAN

DANIEL CRAWFORD, Jr., *Manager*

39th and Chestnut Sts., Philadelphia

One of ten chassisless semi-trailers built of Alcoa Aluminum Alloys by Aluminum Trailer Co. for York Motor Express, York, Pa. Constructed of heavy materials, weight was 8,800 lbs. Weight in Aluminum, 5,270 lbs.

Another trailer saves with MONOCOQUE *Design*

Alcoa Aluminum Alloys used for Chassisless Construction

CUT DEADWEIGHT 40%

350 ton-miles of hauling cost* are saved every day by this unit. Here's why:

1. Monocoque design eliminates use of a chassis.
2. The trailer is built of light, strong Alcoa Aluminum Alloys.

Airplanes built of Aluminum have used monocoque design for many years to combine lightness and strength. Their fuselage has no "chassis." Tons of load are carried by the strength of the panels and their stiffeners.

The same principle (called *Monocoque* design) is being used for trailer bodies. Chassisless, the sidewalls carry the load, eliminating the chassis weight, yet forming a structure actually sturdier than comparable conventional design.

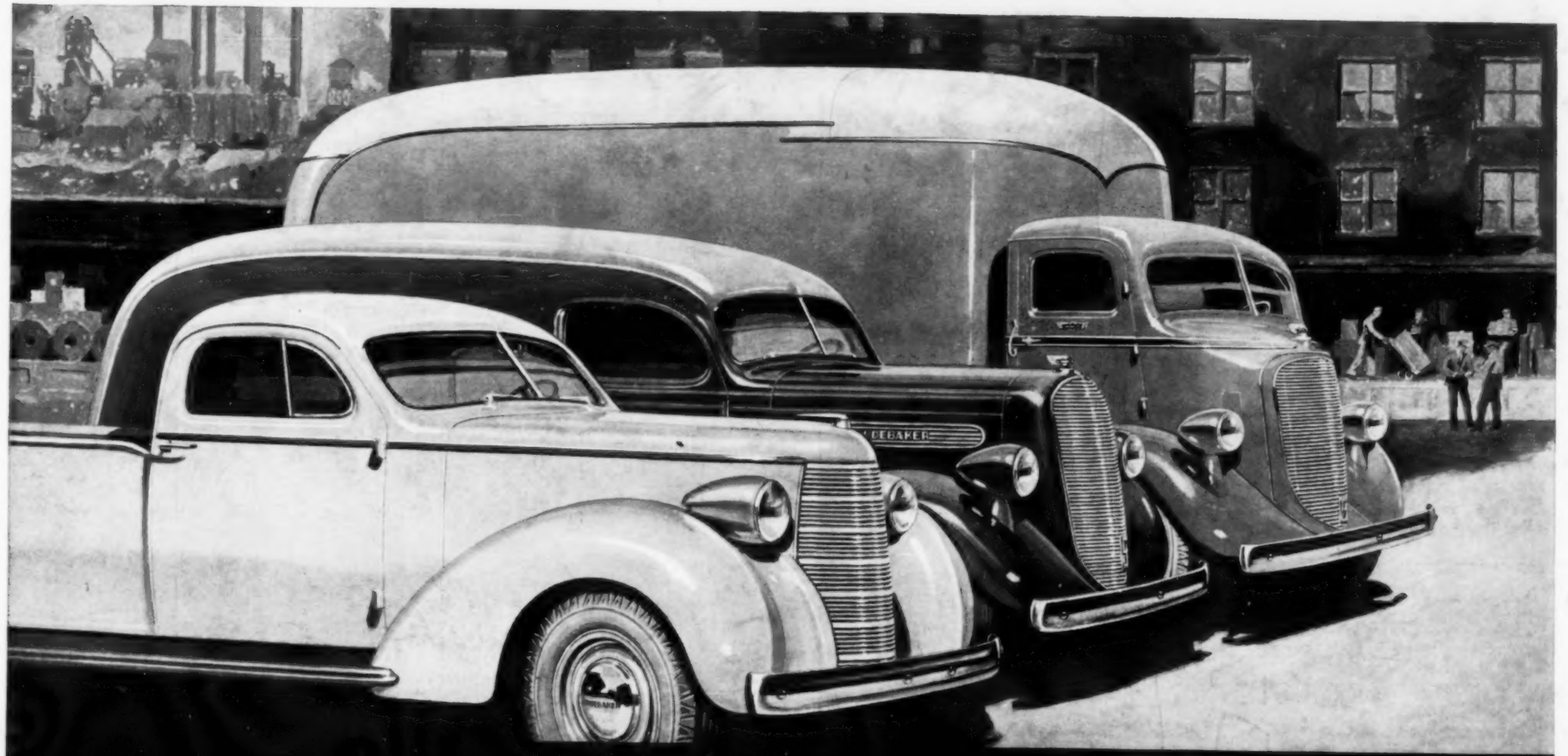
Light, strong alloys of Alcoa Aluminum are ideally suited to the needs of this chassisless design. Panels and members can be made thick and sturdy, thoroughly safe. Yet Aluminum parts are inherently light.

That's why this trailer, belonging to York Motor Express, weighs only 5,270 lbs., which is 3,530 lbs. less than a previous job built of heavy materials. A *Bonus Load*, can be carried in place of deadweight removed — OR, a smaller tractor can be used to haul the lighter trailer. The latter is York's choice.

Our experts will be glad to tell you more about alloys of Alcoa Aluminum, how they are used to cut trucking costs, how they fit *Monocoque* design. Write to: ALUMINUM COMPANY OF AMERICA, 2161 Gulf Building, Pittsburgh, Pennsylvania.

*Figured on gross weight.

ALCOA ALUMINUM



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★ CAB-FORWARD MODELS
★ FAST DELIVERY MODELS

FOR 1938